Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC

In the Matter of:

Request for Review and Waiver of the Decision of the Universal Service Administrator by	)	
Durham Public School District BEN Number: 126878	)	CC Docket No: 02-6
Schools and Libraries Universal Service Support Mechanism	)	
Wireline Competition Bureau	)	

REQUEST FOR REVIEW

INTRODUCTION

Section 54.719(c) of the Commission's rules provides that any person aggrieved by an action taken by a division of the Universal Service Administrative Company may seek review from the Commission.[1] Durham Public School District (Durham) hereby appeals the current action taken by USAC in the following case.

BACKGROUND

On August 4, 2006, Durham received a request for a signed and dated contract with Dimension Data. This request was received as part of a Selective Review for Funding Requests Numbers (FRNs) 1475514 and 1475541. On August 11, 2006, Durham responded, "Dimension Data did not require a signed and dated contract."[2] The Schools and Libraries Division (SLD) then denied the above referenced funding requests and gave

[1] 47 C.F.R. § 54.719(c).

[2] A copy of Durham's August 11, 2006 response is attached as Exhibit A.

the following explanation, "FCC rules require that a contract for the products/services be signed and dated by both parties prior to the filing of the Form 471. This requirement was not met." On October 13, 2006, Durham appealed the denial and attached a copy of the signed contract acceptance sheet.[3] USAC denied the appeal on November 30, 2006, and stated they were unable to accept the new information on appeal.[4]

DISCUSSION

FCC rules require a contract be in place before the Form 471 is filed.[5] On the SLD website, this rule is elaborated upon by defining a contract as a legally binding agreement as defined by relevant state law.[6] Relevant North Carolina procurement laws require a school district advertise the request for purchase agreements, choose the lowest responsible bidder, and put the resulting agreement in writing.[7] There is no requirement that the document be labeled as a contract.

Durham and Dimension Data had a signed, written contract under North Carolina law when both parties signed the Contract Execution/Acceptance Sheet dated February 16, 2006. When Durham signed the Contract Execution/Acceptance Sheet, they were accepting the Statement of Work as proposed by Dimension Data. This agreement was signed before Durham filed their FCC Form 471, and was provided to USAC in the appeal Durham filed on October 13, 2006.

When the school district received the request to provide a contract, the district was not sure what the PIA reviewer needed since they did not have a document labeled as a contract. In the same Selective Review request, the SLD also requested another contract

[3] A copy of the October 13, 2006 Letter of Appeal to USAC and the signed contract acceptance are attached as Exhibit B.

[4] A copy of the Administrator's Decision on Appeal, dated November 30, 2006, is attached as Exhibit C.

[5] 47 CFR § 54.504 (c)

[6] See USAC's website at www.universalservice.org/sl/applicants/step04/contract-guidance.aspx

[7] North Carolina General Statutes, Article 8, § 143-129. Procurement for letting of public contracts, sub-sections (b) and (c).

with a different service provider. Durham was able to provide that contract since it was labeled as a contract.

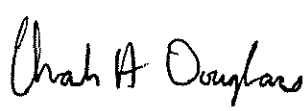
It was not until after the PIA request was due, Durham learned the signed Statement of Work was the "contract" the PIA reviewer needed to verify the agreement with Dimension Data. If the PIA reviewer had questioned the Durham further, Durham would have understood what the PIA reviewer needed and would have been able to provide the signed Statement of Work. When Durham tried to clarify the misunderstanding and provide the signed agreement, USAC would not accept the new evidence and denied Durham's appeal.

SUMMARY

Durham and Dimension Data had a binding agreement in place at the time the FCC Form 471 was filed. If the PIA reviewer would have clarified the documentation request, the District would have provided the signed Statement of Work. Durham accurately answered the PIA reviewer question as the District understood the question, and USAC misinterpreted that response to mean that there was not a binding agreement in place. Durham is simply trying to clarifying a miscommunication with USAC and is not providing "new information".

Durham respectfully requests the FCC to find that Durham had a valid, binding agreement was in place before Durham filed their FCC Form 471. Therefore, both FRN 1475514 and 1475541 should be funded in full.

Sincerely Submitted,



Charles Douglass
Director of Technology Services
Durham Public Schools
P.O. Box 30002
Durham, NC 27702

Exhibit A

Date: August 4, 2006
To: Mr. Charles Douglas
Entity: Durham Public School District
Fax #: 919-560-3716
Sender: Al Arauz

Phone: 973-581-5097
Fax: 973-599-6515
E-mail: aarauz@sl.universalservice.org
Subject: Funding year 2006 E-Rate

***** *** *****

As we discussed, we are in the process of reviewing all Funding Year 2006 Form 471 applications for schools and libraries discounts to ensure that they are in compliance with the rules of the Universal Service program. I am currently in the process of reviewing your Funding Year 2006 Form 471 Application. To complete my review I need some additional information. The information needed to complete the PIA Review is listed below.

This fax is a follow up to the information you provided in reference to the E-Rate Selective Review Information Request Funding Year 2006. Please provide the information requested by the close of business **August 11, 2006**. If we do not receive the information by that date, your application will be reviewed based on the information we currently have, which may impact the approval of your application.

Retrofitting:

- Your investment in retrofitting appears low in relation to the level of network resources you are requesting. Have you already retrofitted your buildings for technology (prior to 2005)? If so, can you briefly document the dollar amount and/or the work done? Also please indicate if this is a relatively new school (past five years or so). If not, please provide a one-page summary of the resources and strategies you have available to retrofit you schools for technology.

NOTE: Retrofitting refers to removing asbestos, adding air conditioning, upgrading wiring, building server closets, knocking down or drilling through walls, or anything else done in order to prepare buildings for new technology.

Response:

Durham Public Schools installed a Voice over IP Phone System during 2001 – 2002. At that time, the network closets were updated to be able to handle the additional requirements. As such, no retrofitting is currently anticipated.

Maintenance:

- Please document your plans for maintaining your equipment both old and new as well as ineligible hardware.
- Is the equipment under warranty?
- Do you have a maintenance contract?
- Do you have a maintenance staff who maintains the equipment? If so please include their salaries on the Item 25 worksheet if you have not already done so.

Response:

All of the Durham Public Schools networking equipment, both eligible and ineligible in kept under warranty. Services for warranty replacement have been included as part of the Request for Proposal for eligible equipment. Ineligible equipment will be maintained by existing DPS Staff.

Certification Page: Please re-address Certification page (Pg. 9 of Selective Review Information Request document first sent to your attention April 17, 2006). Section 3 includes a section for Education Service Agency certification, please check off the appropriate box in this section and return this Certification Page along with the other supports requested in this letter.

Response:

The Certification Page is attached.

Consulting Agreement: Please indicate either "yes" or "no" as to whether you used a consultant and, if you did, provide a copy of the consulting agreement.

Response:

Durham Public Schools did not use a consultant.

Funding Request # 14332214 Verizon South

From my analysis of your supporting documents, it appears that Durham Public SD received only one bid in response to Establishing 470 # 773990000575849 (there was no RFP in this case). Can you confirm if this was indeed the case.

Response:

Durham Public Schools only received one bid for this establishing 470. It was for local phone services, and there was only one company able to provide these services.

Funding Request # 1433277 Nextel

From my analysis of your supporting documents, it appears that Durham Public SD received only one bid in response to Establishing 470 # 902430000572745 (there was no RFP in this case). Can you confirm if this was indeed the case.

Response:

Durham Public Schools only received one bid for this establishing 470. It was for cellular services that can directly connect to the police and fire departments, and there was only one company able to provide these services.

Funding Request # 1475441 CNIC

From my analysis of your supporting documents, it appears that Durham Public SD has advised this vendor that their bid was chosen via an Award Letter dated 2-16-2006. Can you please forward a signed & dated contract with this vendor?

Response:

The Contract is attached

Funding Request # 1475514/1475541 Dimension Data of North America

From my analysis of your supporting documents, it appears that Durham Public SD has advised this vendor that their bid was chosen via an Award Letter dated 2-16-2006. Can you please forward a signed & dated contract with this vendor?

Response:

Dimension Data did not require a signed and dated contract until the work is going to begin.

Please fax or e-mail the requested information to my attention. If you have any questions please feel free to contact me.

It is important that we receive all of the information requested so PIA can complete its review. **If you are unable to provide the requested information because your school has closed or will shortly close for summer break, please let me know when you will be available to respond to these questions. Failure to do so may result in a reduction or denial of funding.**

If we do not receive the information within seven calendar days, your application will be reviewed using the information currently on file. If you need additional time to prepare your response, please let me know as soon as possible.

Should you wish to cancel this Form 471 application, or any of your individual funding requests, please clearly indicate in your response that it is your intention to cancel an application or funding request(s); along with the Form 471 application number and/or funding request number(s), and the complete name, title and signature of the authorized individual.

Thank you for your cooperation and continued support of the Universal Service Program.

Sincerely,

Al Arauz
Selective Reviewer
Ph 973-581-5097
Fx 973-599-6515
aarauz@sl.universalservice.org

Exhibit B

DURHAM PUBLIC SCHOOLS
Technology Services

Charles Douglass
Director of Technology Services
Durham Public Schools
P.O. Box 30002
Durham, NC 27702
Phone: 919-560-9127
Fax: 919-560-3617
Email: Charles.Douglass@dpsnc.net

Letter of Appeal
Schools and Libraries Division
Box 125 – Correspondence Unit
80 South Jefferson Road
Whippany, NJ 07981

October 13th, 2006

Dear Sir:

Durham Public Schools (Billed Entity Number 126878) would like to appeal the decisions reached on the following funding request numbers:

- 471 Application 553758 FRN 1475514
- 471 Application 553758 FRN 1475541

These funding requests were denied as FCC rules require that a contract for the product/services be signed and dated by both parties prior to the filing of the 471.

DPS and Dimension Data do have an agreement that was signed prior to the filing of the 471. A copy of that agreement is attached. Please note that it was dated 2/16/2006. This information was requested and available during the selective review on August 4th, but was accidentally omitted from the submission.

Thank you for prompt consideration of this appeal.

Sincerely,

Charles Douglass
Director of Technology Services
Durham Public Schools

Durham Public Schools

Network Equipment (Switches, Wireless Access Points) and Maintenance Response to Request for Proposal

Prepared By:
David Watkins
Dimension Data
Tel: (919) 791-1068
FAX: (919) 510-4988
David.Watkins@us.didata.com

February 16, 2006

February 16, 2006

February 16, 2006
Charles Douglass
Durham Public Schools
511 Cleveland Street
Durham, NC 27702

Subject: Executive Summary – Network Equipment, Maintenance and Wiring RFP

Dear Mr. Douglass,

Dimension Data is pleased to offer a proposal to address the networking and maintenance requirements at Durham Public Schools (DPS). It is obvious, based on discussions with your team, this is a critical project to DPS and therefore we take your confidence in our abilities very seriously.

After reviewing project requirements, the management and staff at Dimension Data sat down to determine what advantages we could present to DPS. Also, we asked ourselves tough questions about the available technologies in the market and their ability to address the project requirements and scale to support future organizational communication needs. The result, and we are confident you will agree, is that DPS has an opportunity to implement a solution that enables teachers and administrators to work more productively, providing solutions to classroom management, intervention, lesson planning, observations, behavior tracking, and ultimately to improve students achievement.

In support of DPS' goals, please reference the below technology initiatives defined in the *DPS Strategic Technology Plan* that are addressed by the proposed solution:

- **Effective and Efficient Operations: Strategic Technology Plan (5.4 – Ensure Secure Network Access to Support District Operations):**
  - Implement secured wireless access integrated with Active Directory.
  - Evaluate implementing hardware based authentication before access to the DPS network is granted. This would involve requiring authentication to the network, and insure that workstations have the appropriate security patches and virus protection in place before an IP address would be provided on the network. Should the appropriate protections not be in place, an IP address would not be granted and the device would not be granted access to the network.

- **Effective and Efficient Operations: Strategic Technology Plan (5.7 – Develop Wireless, Local Area and Wide Area Networks To Support District Operations):**
  - Confirm local and wide area network performance continues to meet District requirements.
  - Develop and implement a district wide wireless strategy. This will include locating an appropriate wireless infrastructure and installing in all DPS facilities.

Telephone +1 (919) 791 1068 Facsimile +1 (919) 510 4988
801 Corporate Center Drive
Suite 128
Raleigh, NC 27607 USA
us didata com
Dimension Data

Again, we look forward to working with DPS on this effort and leveraging the knowledge obtained from our existing partnership to exceed all project expectations. We value your relationship and appreciate the continued opportunity to work with the DPS team. Please advise if you have any questions regarding the attached content which remains valid through March 16, 2006.

Regards,

David Watkins
Account Manager
801 Corporate Center Drive
Suite 128
Raleigh, NC 27607
(919) 791-1068
david.watkins@us.didata.com
DDNA's Federal ID Number: **13-2554344**

Scott Cruikshank
VP Sales – DDNA
scott.cruickshank@us.didata.com

Contact Information

Address	Web Site
Durham Public Schools 511 Cleveland Street Durham, NC 27702	http://www.dpsnc.net/
Durham Public Schools Contacts	**Contact Information**
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Stephen Brown Network Engineer	Phone: (919) 560-2001 Email: stephen.brown@dpsnc.net
Matt Sickles LAN Administrator	Phone: (919) 560-3911 Email: matt.sickles@dpsnc.net
Dimension Data Contacts	**Contact Information**
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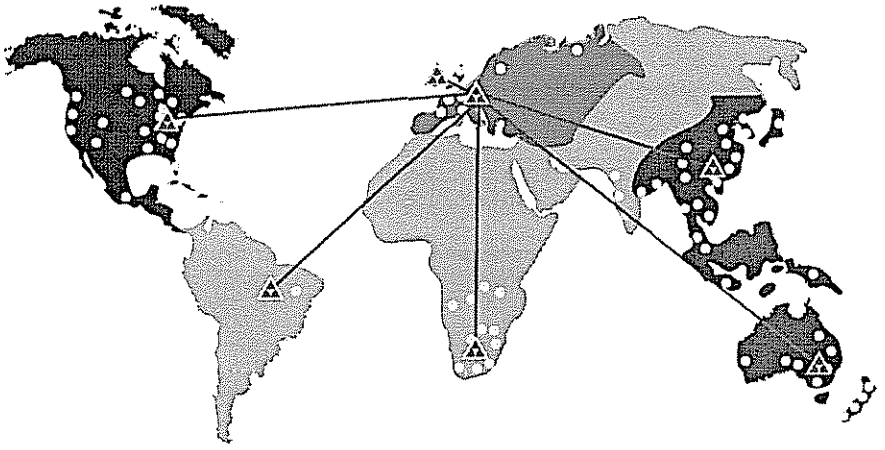
EXECUTIVE OVERVIEW

Dimension Data is pleased to submit this proposal for your upcoming project. Globally, Dimension Data is listed on the London Stock Exchange, and is a member of the FTSE 350 index. Dimension Data employs over 9,000 people and operates in 30 countries on five continents. Our resources include: 4,000 skilled network engineers, 900 Cisco certified engineers, over 180 CCIEs, 1,800 software engineers, and over 250 consultants and project managers.

Around the globe, Dimension Data offers first-class service with a hub on every continent.



The Strengths of This Proposal

After reviewing the requirements presented in the Durham Public Schools RFP, the management and staff at Dimension Data sat down to determine what advantages we could present to Durham Public Schools. We believe that Durham Public Schools should choose Dimension Data for several reasons. Among the strongest reasons are:

1. **Our Cisco Relationship.** Globally, Dimension Data sells more Cisco products than any other company. We are one of a dozen Cisco Global Support Partners. This partnership requires that we support clients technically and logistically across the globe in local languages and in English. We are a Cisco Gold Partner on five continents, and hold dozens of other Cisco certifications, including:
    - IP/Telephony Services Specialization
    - IP/Telephony Revised Specialization
    - VPN Security Specialization
    - Wireless LAN Specialization
    - Network Management Specialization
    - ATP: Optical - Metro Transport
    - ATP: IPT/Remote Network Operations

Cisco Systems
Partner
Gold Certified

- ATP: Storage (SN 5428 & 5420)

2. **Procurement Experience.** Dimension Data services large Global Cisco Procurement contracts with other large organizations. For HBSC, Inc. and JP Morgan Chase, we have Global Cisco Procurement Contracts for supplying, servicing, and supporting Cisco solutions.
3. **Dimension Data is a Stable Company.** Dimension Data has been profitable every year since beginning in 1983 and continues to be profitable.
4. **Procurement Ease.** Dimension Data provides an Extranet from which Durham Public Schools can monitor all transactions. This is an online media that provides transparency to the ordering environment.
5. **Comprehensive Offerings.** As evidenced by the variety of Case Studies offered throughout this proposal, Dimension Data has performed advanced Assessment, LAN/WAN Implementation, IP Telephony, Network Management, and Multimedia solutions. We can readily be the reliable single IT source that Durham Public Schools seeks.
6. **Service.** The Account Team dedicated to Durham Public Schools has significant industry experience and is committed in word and deed to Durham Public Schools success. David Watkins is your Account Manager and will be your central point of contact. A team of results-driven, veteran performers all of whom are prepared to deliver the highest level of satisfaction and effectively respond to any unexpected situation supports him. In particular, you have a dedicated Inside Sales Account Manager in Brad Hillier. Brad is dedicated to Durham Public Schools for placing hardware orders, tracking shipments, and expediting emergency requests.
7. **Project Management Expertise.** A key component to Dimension Data's response is our project management methodology called Primer. Primer is the framework through which we design and deliver our solutions. Comprised of five distinct phases, each flowing logically, one into the next, it has allowed us to consistently and reliably deliver effective results for our clients. Based on project management methodologies and standards that are recognized worldwide, it produces information and insight within a controlled and managed structure—nothing gets lost. Primer is structured to provide the most relevant and scalable solution for your organization and then deliver it on time, accurately, and cost-effectively.

Thank you for considering Dimension Data for this opportunity. We look forward to working with you and becoming Durham Public Schools vendor of choice. We are a strong, strategic partner of Cisco, IBM, Sun, EMC, Oracle, Hewlett-Packard, Compaq, Polycom and others. Durham Public Schools can rely on Dimension Data's expertise for the deployment and interoperability of all network, systems, storage and security platforms from different vendors.

We look forward to discussions and respectfully submit the following response.

GENERAL PROPOSER QUALIFICATIONS AND EXPERIENCE

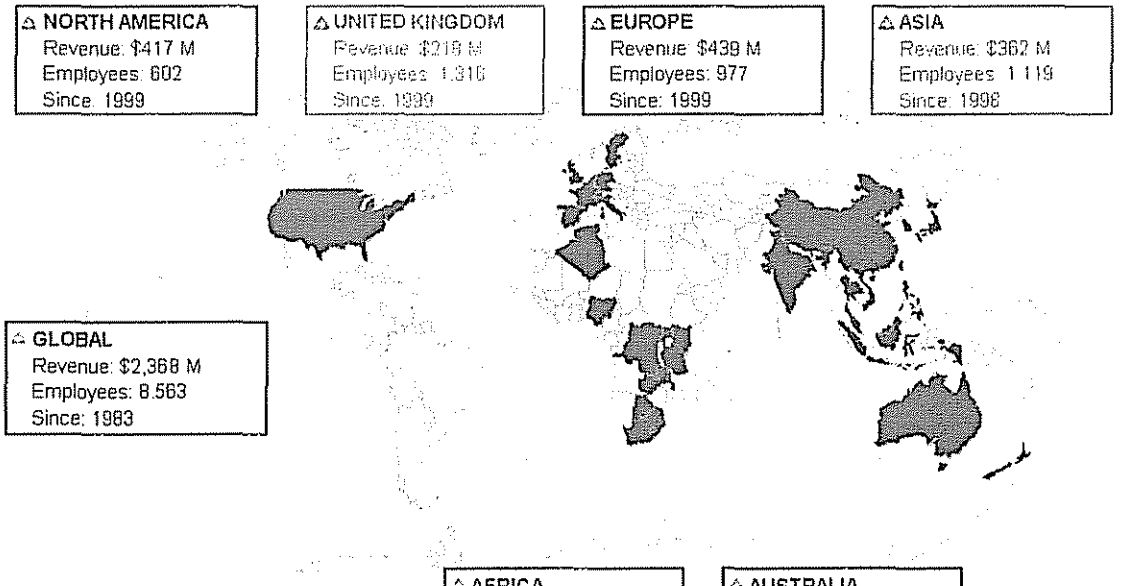
DIMENSION DATA BACKGROUND

Dimension Data Overview

Dimension Data is a specialist IT services and solution provider that helps customers plan, build and support their IT infrastructures. Dimension Data applies its more than 20 years of experience in technology infrastructures, its expertise in networking, security, operating environments, storage and contact center technologies and its unique blend of skills in integration, consulting and managed services to create solutions that help clients realize a greater return on their IT investments.

Dimension Data is recognized as a trusted advisor to its commercial and enterprise clients around the globe. With more than 9,000 employees globally and a staff of over 650 in North America, Dimension Data has a footprint that brings our customers local execution, while leveraging the experience and depth of a large company.

Dimension Data was founded in 1983 and since that time has grown to become a global leader in the IT infrastructure services space with revenues of $2.7 billion. The Company is listed on the London Stock Exchange [DDT LSE] and operates in 30 countries on five continents.



* Revenue for 12 months to September 2004

** Revenue figures excludes Associates – Total Associates = $116 M

We work with our clients to solve critical business issues through technology. Dimension Data targets areas of the IT organization where there is the most pressing need and most immediate ROI, often extracting renewed value from past IT investments. We optimize the complete infrastructure over time and at a rate that suits the client. By doing this, Dimension Data helps businesses evolve their infrastructures away from separate, individual systems that duplicate functionality and increase operational management costs, to a more rational architecture that

takes advantage of standardization and the convergence of the application and network layers. Due to the breadth and depth of its offerings, Dimension Data is able to deliver a comprehensive portfolio of IT infrastructure lifecycle services, covering everything from design and deployment to training, ongoing support and optimization through to procurement and installation.

Our rich history in networking places us at the forefront in helping clients simplify and consolidate their IT infrastructures through Internet Protocol (IP) convergence. In addition to bringing strong domain expertise in implementing IT infrastructures, we work with our clients to solve critical business issues through technology, including:

- **Maximizing the value of information assets:** Our objective is to maximize the value of information assets within an organization while minimizing the cost of creating, sharing and storing the information.
- **Driving operational efficiency of IT infrastructures:** We balance the ongoing issue of decreasing operational costs while improving reliability, flexibility and quality of service.
- **Creating profitable customer relationships:** We help organizations develop and improve communication channels to deliver lasting customer relationships at lower costs.
- **Improving employee productivity:** We help organizations improve employee and partner collaboration to deliver greater productivity, improved information sharing and knowledge management.
- **Securing networks, applications and data**: We help organizations reduce risk by offering solutions that protect, detect, and respond to external and internal incidents and threats.

PRIMER PROJECT MANAGEMENT METHODOLOGY

Sound project management is essential to any successful project. This will be particularly true for you as you upgrade your network. With multiple stakeholders across multiple locations, a tenacity for strong project management will be absolutely essential to roll out your new network. Dimension Data's "Primer" Project Management Methodology has been used and proved throughout thousands of engagements.

Dimension Data has a defined and robust project management methodology termed "Primer." Primer provides:

- Project ownership throughout the lifecycle
- Single point of responsibility and contact, focused on your organizational needs
- Coordination of all resources (internal & external)
- Identification and management of risk
- Problem management, ownership and resolution

Reporting, solving problems, and preventing future problems are all inherent to the Primer methodology, which is lived by Dimension Data's Project Managers. Specifics, such as frequency of reporting, are covered during the first phase (Inception) of the project. The five Primer phases are:

1. **Inception Phase** -

   Articulating the customer's vision for a solution

2. **Definition Phase** –

   Defining the solution

3. **Build Phase** –

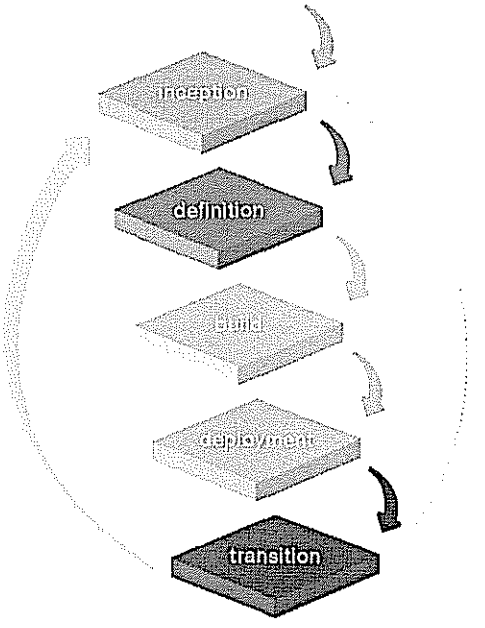
   Creating the solution

4. **Deployment Phase** –

   Deploying the solution into the customer's environment

5. **Transition Phase** –

   Transition to new ownership



Dimension Data's project management & communication approach have been put to the test on projects in matrixed organizations with multiple partners. Our adherence to process and the use of tools to facilitate communication amongst all parties enables us to often be the "glue" in large projects that span departments in large organizations.

Dimension Data has experience in playing several different roles on large projects with stakeholders from different business units and/or departments. For example, we have been prime integrators on multiple large-scale projects and we have also acted as a sub-contracted partner providing subject matter expertise. We bring a collaborative attitude and process-oriented focus to the table that allows us to work with client partners of any size.

Dimension Data focuses on evolving its "best of kind" project management approach and structured development process. By leveraging our many client engagements, we have developed and refined project management processes and techniques to enable success. This section provides an overview of our proprietary approach to project organization and management.

At Dimension Data we focus on the timely completion of project phases, while producing quality deliverables. Furthermore, we strive to mitigate project risks through proactive project management and communication using standard industry best practices. We do this by placing strong emphasis on the importance of project management, including maintaining effective communication, keeping delivery expectations aligned, and tracking project status. While our project management approach provides a framework for project execution, the unique challenges posed by each project necessitate that experienced project managers adapt the approach to meet the specific client needs. The following are project facilitation tools and processes that Dimension Data uses throughout project life cycles:

- **Project Kickoff** – A formal Project Kickoff meeting that Dimension Data holds with the client at the beginning of the project, to gain an understanding of the project goals and objectives and to clarify any uncertainties. The Project Kickoff, which results in the Project Charter document, helps verify that all constituents understand objectives, goals,

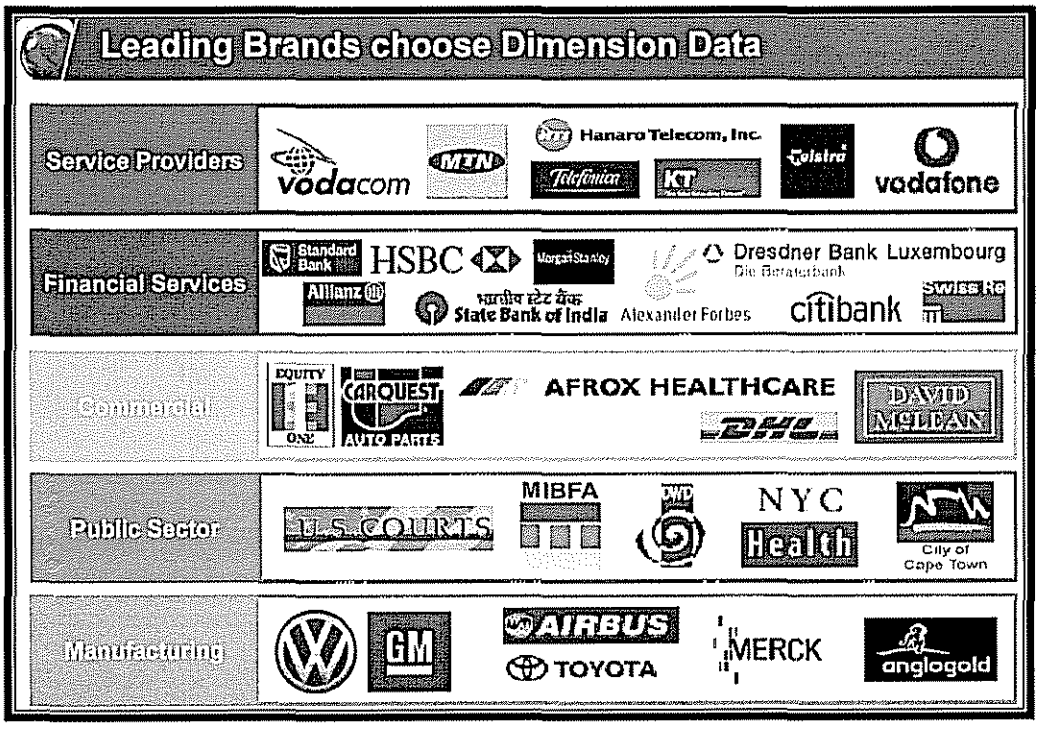
the approach and roles from the beginning. As such, we find it a worthwhile investment in time.

- **Project Mission Statement** – A brief paragraph describing the objectives of the project.
- **Project Success Factors** – A list of criteria that need to be met in order for the project to be successful.
- **Deliverable List and Responsibility Matrix** – A list of deliverables mapped to team members and deadlines.
- **Identification of Key Project Players** – A list of team member names, roles, and descriptions.
- **Sign-off Authority** – A one-page sign-off sheet that is used for client approval of final deliverables.
- **Communication Plan** – A master document detailing all avenues of communication, from regular meetings (purpose, attendees, date/time, location, conference call numbers, etc.) to regular deliverables such as status reports (frequency, distribution method, receivers, etc.). The communication plan will be maintained and made available to all project team members.
- **Agenda for Weekly Status Meetings** – An agenda that is distributed to the team for each meeting.
- **Issue Management Process** - Issues and "bugs" are tracked and regularly managed by the Project Manager using a software tool specifically designed for this purpose. Tracking and management are performed throughout the life of a project, and the results are recorded in the "Issues Log," a document that is maintained on the Project Extranet.
- **Escalation Process** – Dimension Data will work with the client to establish an Account Ladder that describes the escalation process for the project. The project manager will handle day-to-day project issues. Those that cannot be resolved in a timely manner, or which are outside of the project manager's area of expertise, will be escalated to the next highest level. Escalation will continue until resolution is achieved.
- **Change Management Process** – Dimension Data controls changes to software or documentation through this Change Control Process. The purpose of change management is to minimize the impact of changes on development, while also facilitating the orderly and efficient incorporation of accepted changes.
- **Contract Management** – The project manager will assume overall contract management responsibilities. This will include all of the deliverables and project activities to verify their compliance with the contract.
- **Financial Management** - When Time & Material projects begin, the project manager will establish a financial status report process that will summarize the detailed cost information contained in the master project plan. This report will be the basis by which the project manager will communicate project progress against agreed upon budgets. Every week the project manager will update this report, email it to key team members, and post it on the project extranet. NOTE: This tool is not needed for Fixed Price projects.

- **Project Plan** – The Project Plan describes identified tasks, dependencies, and schedule information to determine target milestone completion dates, estimated resource requirements, and the impact of any changes to the plan. Dimension Data will develop a comprehensive project plan, including dependencies, based on the task lists and effort estimates available from the team members responsible for the tasks. Our project manager will use a software tool, e.g. Microsoft Project to produce a continuously evolving document that will be updated on a weekly basis to track actual project progress. The status of this project plan will be shared during the weekly status meetings with the client.
- **Vendor & Subcontract Management** – The project manager will be responsible for managing schedules, deliverables, and quality assurance activities of vendors and subcontractors. Moreover, the project manager will define and assign deliverables to vendors, where necessary, and manage the vendor and subcontract-related finances.

MAJOR DIMENSION DATA CLIENTS

Major clients include:



DIMENSION DATA'S SERVICES

Connectivity Services

Dimension Data's Connectivity Services plan, deploy and sell networks, systems, and storage services that help companies improve the flow and storage of data, voice, and video. Our offerings range from deploying global wide area networks (WANs) to building IP Telephony systems that include customized extensible markup language (XML) applications. Our Connectivity Services solutions and service platforms incorporate the following areas:

DATA CENTER SOLUTIONS

Proven expertise to design and deliver architectures that meet today's data center needs. In addition to design, Dimension Data's DCS solution addresses Backup and Recovery, and Data Management. Specific components of the Enterprise Services and Solutions arena where Dimension Data possesses expertise include:

- **Storage Ready Networks** - a new approach to the storage architecture designed to reduce costs, ensure efficiency, and guarantee shared access.
- **Server & Storage Consolidation** - consolidating servers and processors, to ensure the most power for the fewest CPUs, yielding a productive and cost efficient backbone for the enterprise system.
- **Windows 2000/2003 Migrations** – Dimension Data is a leader in migrating to Windows 2000 or 2003 Active Directory, in addition to upgrades of, and migration to, the latest Exchange, SQL, IIS and other Microsoft Server products.
- **Infrastructure Refresh** – Data center solutions designed to solve business problems, simplify processes, and improve collaboration with business partners.

INTERNET PROTOCOL TELEPHONY (IP TELEPHONY)

Improving and streamlining communication processes is one of the most efficient ways to improve your company's bottom line. The goal is to merge phone, fax, and e-mail onto one platform while maximizing efficiency, improving performance and satisfying customer demands. Dimension Data's IP Telephony solutions help businesses increase operational efficiencies while enhancing communications capabilities through unified messaging, real-time data sharing, and custom XML applications. Over the last five years, Dimension Data has installed over 500,000 IPT phones worldwide – more than anyone else in the world. This makes us Cisco's largest IPT provider.

We have the unique capability of offering a full life-cycle solution. This means we can provide everything from design and implementation of an IP telephony infrastructure to the development of XML applications to the operational services necessary to ensure the applications are up and running.

We provide our customers with:

- IP networks that are robust, flexible and scaleable
- Systems integration skills that deliver the required functionality
- Application integration skills to integrate IPT systems with customer systems such as billing, databases, directories and contact centers

- XML development skills

NETWORKING

Dimension Data designs and deploys bundles of network products and services that enhance the connectivity and integration of a business's network infrastructure, making it more efficient and flexible. These services include:

- **Wide Area & Local Area Network Solutions (WAN/LAN)** - Dimension Data has extensive, global experience assessing, designing, and building IT networks that leverage today's most advanced technologies in this space.
- **Wireless Enterprise Networks** - As one of Cisco's largest global partners, Dimension Data has developed expertise around Wireless LAN products and solutions.
- **Voice & Media Networks** - enabling organizations to achieve productivity enhancements, and realize infrastructure efficiencies by creating customized business applications that integrate into and take advantage of consolidated voice, messaging, video and data IP networks.
- **Managed Network Services** - Dimension Data provides a comprehensive set of offerings that reduce the risks inherent with most robust IT infrastructures by measuring performance, identifying and resolving issues before they impact the enterprise.
- **Proven Engagement Delivery Methodology** - Primer is a proprietary framework used to design and deliver our networking solutions.

SECURITY

Keeping your company's information secure and protecting the confidentiality, integrity, and availability of your digital assets are growing and costly challenges. With over 90 per cent of a company's intellectual capital in digital form, the importance of protection is clear. Threats of computer theft, as well as electronic espionage, sabotage, and virus attacks are making corporate networks more vulnerable than ever before. Dimension Data offers a broad range of security solutions. Because we are able to assess and understand an organization's infrastructure, we are able to develop a comprehensive, security plan that spans the entire Application Network. The first step in protection is identifying vulnerable assets and the degree of protection that they require. The Risk Management component of our security practice accomplishes this. It includes:

- Assessment & Planning (Surveyor)
- Penetration Testing
- Vulnerability Scanning

The second step in protecting valuable assets is determining the degree of security required to keep them safe. Unlike other security companies who only focus on firewalls and routers, Dimension Data understands the complexities of the enterprise by analyzing the entire Network Security Architecture. This holistic approach to security encompasses:

- Wireless
- IP Telephony
- Remote Access

- Access Control
- Perimeter Security

Detection is accomplished through Dimension Data's Managed Security Service, Insite Secure. This offering enables companies to outsource the daily management and maintenance of all security-related components. Insite Secure includes:

- Intrusion Detection Services
- Managed Firewall
- Secure SMTP Mail Gateway with Antivirus checking
- HTTP/FTP Proxy Gateway with optional Anti-virus Check and URL Filtering
- File /System Integrity Checking
- Daily Firewall Vulnerability Port Scan

Rapid response to any security breaches experienced by our clients is provided by Dimension Data's Computer Incident Response Team (CIRT). CIRT employs a four-step process that helps clients to recover from any incidents that may occur. The process involves identification, containment, eradication, and recovery.

Managed Services

Dimension Data's Managed Services enable customers to reduce costs while increasing the net asset value of their IT investment. Our customers can focus their resources on critical business initiatives, secure in the knowledge that they are supported by services that have been developed globally and utilized worldwide. Dimension Data's Managed Services are built for flexibility and agility and ensuring a predictable service is delivered. Whether moving from an internal to an out-tasked IT environment, migrating from PABX to IP Telephony, managing an infrastructure consolidation, or seeking a partner to focus on delivering a service around a specific requirement (for example, backup management), Dimension Data's flexible Managed Services are well positioned to support these needs.

- Our Managed Services solutions and service platforms incorporate the following areas:
- **Insite Managed Services:** Insite is our online IT monitoring and management service. With three levels of service to choose from, this service can range from basic fault monitoring to extensive predictive analysis and reporting. This service can span multiple technology and business areas, depending on your requirements.

- **Uptime Maintenance Services:** Uptime is our IT maintenance service. It includes total support, troubleshooting and resolution service for mission-critical IT systems. From traditional "break fix" maintenance to proactive online monitoring and support, Uptime can help manage your entire IT systems environment 24 hours-a-day, 365 days-a-year.
- **Hosting:** Dimension Data's Enterprise Application Hosting business unit offers full service enterprise hosting and outsourcing and caters to mid-market companies. By

providing a highly customized, full spectrum of managed services for complex, high availability enterprise computing environments, we allow our customers to control IT costs and re-focus critical IT resources on more strategic, mission critical efforts.

- Currently supported environments include high availability ERP applications, back office messaging and various network and web server functions. As an extension of our hosting capability, additional resources from the Dimension Data field organizations are utilized as required to extend our support reach to include local on site services. Examples include network infrastructure build-outs, IT environment transition management, application architecture development and ongoing on site technical presence.
- **Application Management:** Through Dimension Data's Application Management services we can monitor and maintain applications delivered through a centralized support structure. This centralized support structure incorporates traditional application maintenance with new monitoring and online capabilities. It enables enhanced service delivery to better match the demands of existing and emerging real-time business systems.
- **Managed Security Services:** Dimension Data offers an extensive set of Managed Security Services to help customers achieve higher levels of information security at a lower operational cost than they can achieve by doing it themselves. These include: managed firewall, managed intrusion detection, managed vulnerability protection, and managed content/URL filtering.

IT Leasing Services

The terms and conditions of an IT purchase may be as important to your ROI as the actual costs. With that in mind, Dimension Data has created robust leasing programs that help clients reap the benefits of new technology, adhere to their accounting practices and preserve cash.

A Robust Offering; Flexible Terms

Mature relationships with established financing sources, suppliers and clients, plus a sophisticated understanding for equipment residual market value, allow Dimension Data to structure robust financing options that include:

- **Master Leases,** which allow clients to finance a combination of hard costs (assets) and soft costs (consulting, software, maintenance)
- **Fair Market Value Leases,** which allow for the financing of fixed assets
- **Multi-Vendor Leases,** which allow the lease of equipment from multiple vendors and OEM's
- **'$1.00 Out' Leases,** which enable the financing of services
- **Flexible Terms,** 12, 24, 36, 60-month or custom
- **Balloon, quarterly,** and seasonal payment options
- **Exit Options** to meet planning requirements

Enhance ROI; Mitigate Risk

Increasingly constrained by economic conditions, companies sense the real value lies in their use of technology, not in their ownership of it. Creative financing allows you to reduce the upfront

costs for IT equipment, which mitigates financial risk and maximizes return. Specific benefits include:

- Acquisition of new technology while preserving cash
- Flexible payment plans
- Prudent management of company capital and cash flow
- Time expense recognition and expenditure of funds

Please send an e-mail to ddna-leasing@us.didata.com for further information.

Dimension Data Direct

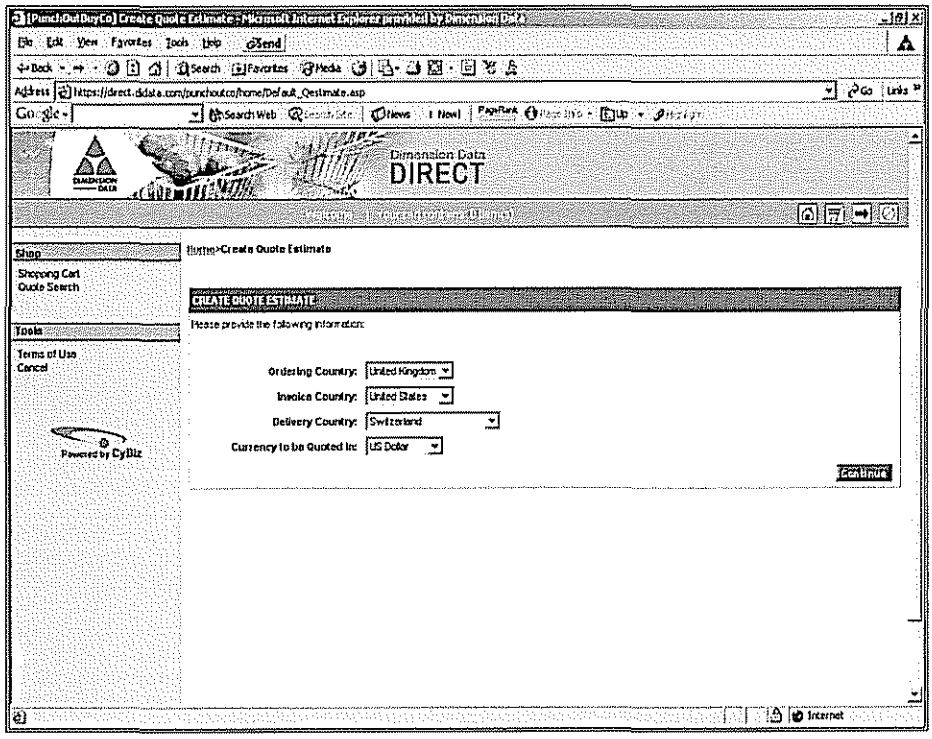
Dimension Data has launched an eProcurement portal called Dimension Data Direct (DD Direct). As you will see, DD Direct goes beyond the capabilities of ALL competitive offerings. This system integrates web-based transaction management and decision support tools with strategic sourcing processes to greatly enhance your technology purchasing capabilities. DD Direct's scalable platform is built upon industry standards and developed to grow with your business needs, improve employee productivity and enhance operating efficiency on a company-wide basis.

The DD Direct benefits include:

- Increase order efficiency by as much as 33%
- Avoid capital outlay for an eProcurement system
- Better manage the procurement process
- Develop standard configurations inline with budget buying and much more...

The DD Direct features include:

- Self Service configuration and ordering
- Automated workflow mapped to internal purchasing process
- Ability to integrate our tool into your internal procurement system and much more...



DIMENSION DATA LOCATIONS:

Dimension Data Locations

Globally, Dimension Data has 9,000 employees. Of these 9,000 people, over 600 are located in the United States. Our North American headquarters is in Reston, VA (12120 Sunset Hills Road, Reston, VA 20190). We have offices in the following states:

Arizona

14301 N. 87th Street, Suite 319
Scottsdale, AZ 85260

Connecticut
2 Enterprise Drive Suite 303
Shelton, CT, 06484

Florida
28050 US Highway 19 North, Suite 208
Clearwater, FL 33761

Georgia
300 North Point Center East
Alpharetta, Georgia, 30022

Illinois
900 National Parkway, Suite 280
Schaumburg, IL 60173

Maryland
8840 Stanford Boulevard
Columbia, MD 21045

Massachusetts
135 Newbury Street
Framingham, MA 01701

550 Cochituate Road
Framingham, MA 01701

Michigan
6515 B Commerce Road
W. Bloomfield, MI 48324

New Jersey
1000 Howard Blvd, Suite 104,
Mt. Laurel, NJ 08054

379 Thornall Street
Edison, NJ 08837

New York
110 Parkway Drive South, PO Box 13308
Hauppauge, NY 11788

One Penn Plaza, Suite 1600
New York, NY 10119

400 Oser Avenue
Hauppauge, NY 11788

North Carolina
5265 Parkway Plaza Blvd., Suite 140
Charlotte, NC 28217

801 Corporate Center Dr, Suite 128
Raleigh, NC 27607

11440 Carmel Commons Blvd
Charlotte, NC 28226

9400 E. Southern Pines Blvd, Suite 140
Charlotte, NC 28358

Pennsylvania
300 Allegheny Drive
Warrendale, PA

Virginia*
12120 Sunset Hills Road
Reston, VA 20190
*North American Headquarters

4405 Cox Road, Suite 100
Glen Allen, VA 23060

14 E. Campbell Avenue
Roanoke, VA 24011

TECHNICAL PROPOSAL

Mandatory Proposer Qualifications

Technical Proposals shall provide responses and documentation, as required, that indicate that the Proposer has met the Mandatory Proposer Qualifications requirements. Any Proposal which does not meet the mandatory requirements and provide all required documentation may be considered nonresponsive, and the proposal may be rejected. Technical Proposals shall provide the following information (referencing the subsections in sequence):

- Written confirmation that the Proposer shall comply with all of the provisions in this RFP. (Note: If the Proposal fails to provide said confirmation without exception or qualification, the District, at its sole discretion, may determine the proposal to be a nonresponsive offer, and the proposal may be rejected.)
- written certification and assurance of the Proposer's compliance with:
  a. the laws of the State of North Carolina;

  Dimension Data has read and complies with the laws of the State of North Carolina

  b. Title VI of the Civil Rights Act of 1964 and the regulations issued there under by the federal government;

  Dimension Data has read and complies with Title VI of the Civil Rights Act of 1964 and the regulations issued there under by the federal government

  c. the Equal Employment Opportunity Act and the regulations issued there under by the federal government;

  Dimension Data has read and complies with the Equal Employment Opportunity Act and the regulations issued there under by the federal government

  d. the Americans with Disabilities Act of 1990 and the regulations issued there under by the federal government;

  Dimension Data has read and complies with the Americans with Disabilities Act of 1990 and the regulations issued there under by the federal government

  e. the condition that the submitted proposal was independently arrived at, without collusion, under penalty of perjury; and,

  Dimension Data affirms that the submitted proposal was independently arrived at, without collusion, under penalty of perjury

  f. the condition that no amount shall be paid directly or indirectly to an employee or official of the District as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Proposer in connection with the procurement under this RFP.

  Dimension Data affirms that no amount shall be paid directly or indirectly to an employee or official of the District as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Proposer in connection with the procurement under this RFP

- The vendor must be a certified service provider for these products and have a Schools and Libraries (E-rate) SPIN number included with the quote. SPIN #: 143007139

TECHNICAL APPROACH

District is seeking bids for providing:

1. INSTALLATION AND MAINTENANCE SERVICES TO INCLUDE

WIRELESS NETWORK ACCESS

The District requests 54 MB (a/b/g) wireless access throughout the listed school buildings with no dropouts. The configuration will include guest access that only allows connection to the Internet and 802.1X authenticated and encrypted teacher access allowing connection to all District based resources. It will be the responsibility of the vendor will determine the number, type and configuration of the wireless access points as well as any additional devices. The vendor will also provide the necessary cabling between the access points and the wiring closet.

Notes: A Cisco Airespace Wireless Network is already installed at George Watts Elementary school. Additional specifications are available on request.

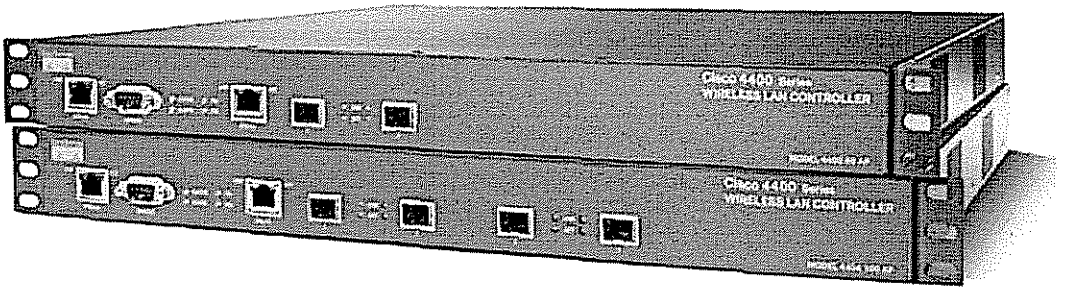
WIRELESS LAN SOLUTION

Cisco Unified Wireless Network

In 2005 Cisco acquired Airespace for their Wireless LAN Controllers and LWAPP based Access Points. Based on this acquisition, they have replaced their SWAN (Structured Wireless Aware Network) solution with Cisco Unified Wireless Network. The Cisco Unified Wireless Network cost-effectively provides superior wireless security, management, deployment, radio frequency (RF) technology and mobility to help enable real time access to core business applications and deliver enterprise-class secure connectivity. For more information on Cisco Unified Wireless Network, go to the following Web page.
http://www.cisco.com/en/US/netsol/ns340/ns394/ns348/ns337/networking_solutions_package.html

Wireless LAN Controller

This new Wireless LAN solution is based on the Airespace Wireless LAN Controller (WLC), which is sometimes generically referred to as a Wireless Switch. With a controller based Wireless LAN, the Access Point plays a smaller roll in the network compared to the Aironet autonomous Access Point model. The controller is the central point of configuration, security and management of the wireless LAN, which reduces the amount of overhead required in deploying and maintaining a wireless LAN.



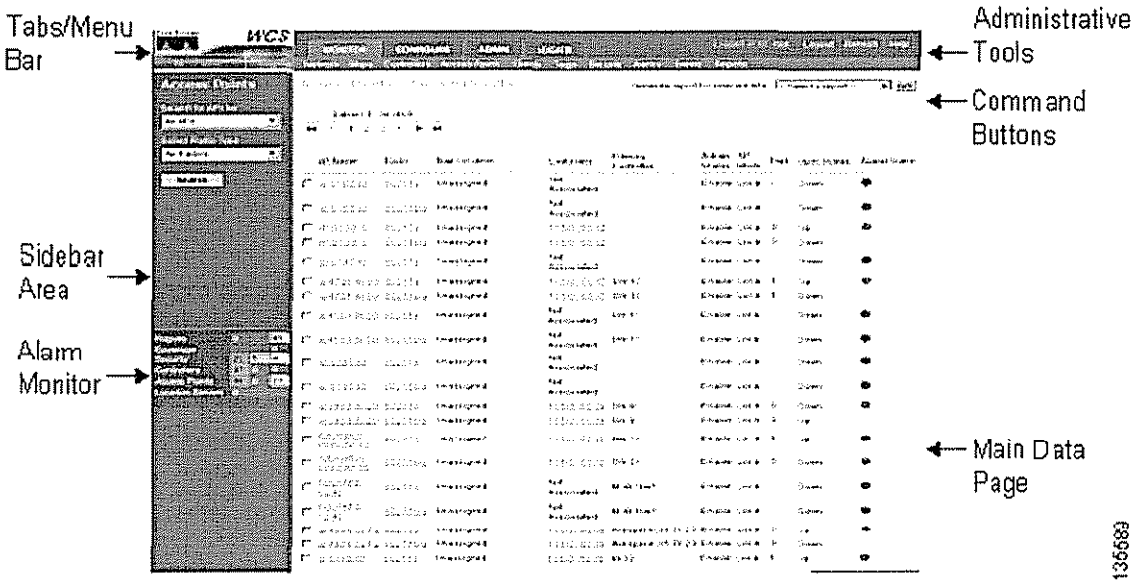
The original investment in Aironet 1100 and 1200 series Access Points is not lost due to this change in solution offerings, because with the Airespace 4400 series WLC and a LWAPP IOS image upgrade, either of these Access Points can be managed by the WLC.

Wireless Control System

At the core of Cisco's Unified Wireless Network architecture is the Wireless Control System (WCS). The WCS is a software based solution that is installed on a Windows based server. The WCS is an optional network component that works in conjunction with Cisco 1000 Series Lightweight Access Points and Cisco Wireless LAN Controllers. With Cisco WCS, network administrators have a single solution for RF prediction, policy provisioning, network optimization, troubleshooting, user tracking, security monitoring, and wireless LAN systems management. Robust graphical interfaces make wireless LAN deployment and operations simple and cost-effective. Detailed trending and analysis reports make Cisco WCS vital to ongoing network operations. For more information on Cisco's Wireless Control System, go to the following Web page: http://www.cisco.com/en/US/products/ps6305/index.html

The WCS should be deployed at Durham Public Schools in order to help reduce the cost of management, as well as to provide the advanced level of reporting that is necessary to minimize troubleshooting efforts, in case a problem arises. Below is a screen shot from the user interface showing the different sections with the alarm and notification messages in the Main Data Page. Of particular interest is the Alarm Monitor in the Sidebar Area. It displays immediate information on items such as:

- Rogue AP Alarms
- Coverage Alarms
- Security Alarms
- Controller Alarms
- Access Point Alarms



Wireless LAN Deployment Professional Services

Overview

Dimension Data will provide Durham Public Schools with a turnkey wireless solution at each site including all infrastructure and professional services required to deploy a fully functional and operational wireless LAN capable of supporting data, with options to include voice and video applications. Dimension Data will manage the design, development and deployment of the solution from inception to delivery providing Durham Public Schools with a single point of contact throughout the lifecycle of the engagement. Below please find a summary and detailed description of key activities to be performed for each of the sites.

Wireless LAN Site Survey

Dimension Data will perform a Wireless LAN (Wireless LAN) Site Survey for the sites that require one in order to provide 100% IEEE 802.11a/b/g coverage. The Wireless LAN site survey will verify such things as correct number of APs and antennae, antenna type, AP and antenna placement, channel selection and transmit power settings. In addition, Dimension Data will make recommendations on the necessary security measures needed to protect Durham Public Schools existing LAN at each site.

Wireless Equipment Procurement

Based on the results of the Wireless LAN Site Surveys, Dimension Data will provide Durham Public Schools with a final Bill of Materials and manage the procurement, delivery and staging of all infrastructure required for each site.

Wireless LAN Deployment

Dimension Data will implement a Wireless LAN to provide 100% coverage in specific areas within each location as identified in each of the Wireless LAN Site Surveys conducted for the specified sites. The Wireless LAN will provide Durham Public Schools employees and guests an optimal solution to meet the coverage and data access needs of the organization, with options to include voice and video coverage application.

Project Management

Dimension Data will provide complete project management to ensure the Wireless project is delivered on time and on budget. Dimension Data's proven Primer Project Management Methodologies ensure successful implementation of an optimal solution to address Durham Public Schools business and technical requirements.

Detailed Project Scope

Dimension Data will provide the professional services to complete this engagement in accordance with the following tasks.

Project Management

Dimension Data will manage the full lifecycle of the Wireless LAN deployment for each Durham Public Schools site. Dimension Data will serve as the single point of contact for managing the deployment of the entire solution and will use our "Primer" Project Management methodology to manage the engagement.

Dimension Data has a defined and robust project management methodology termed "Primer." Primer provides:

- Project ownership throughout the lifecycle
- Single point of responsibility and contact, focused on your organizational needs
- Coordination of all resources (internal & external)
- Identification and management of risk
- Problem management, ownership and resolution

Reporting, solving problems, and preventing future problems are all inherent to the Primer methodology, which is lived by Dimension Data's Project Managers. Specifics, such as frequency of reporting, are covered during the first phase (Inception) of the project. The five Primer phases are:

Inception Phase

- Articulating the customer's vision for a solution

Definition Phase

- Defining the solution

Build Phase

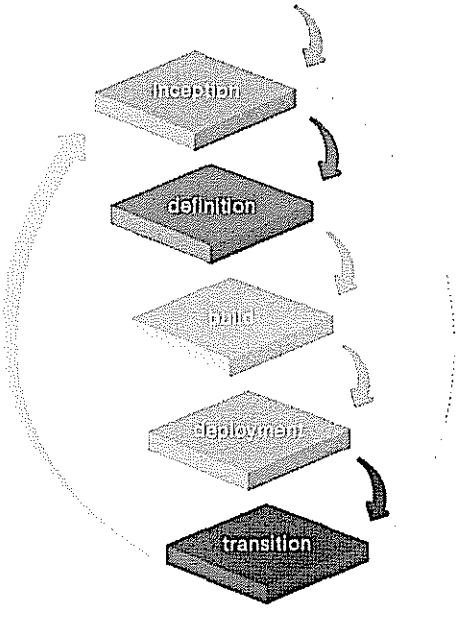
- Creating the solution

Deployment Phase

- Deploying the solution into the customer's environment

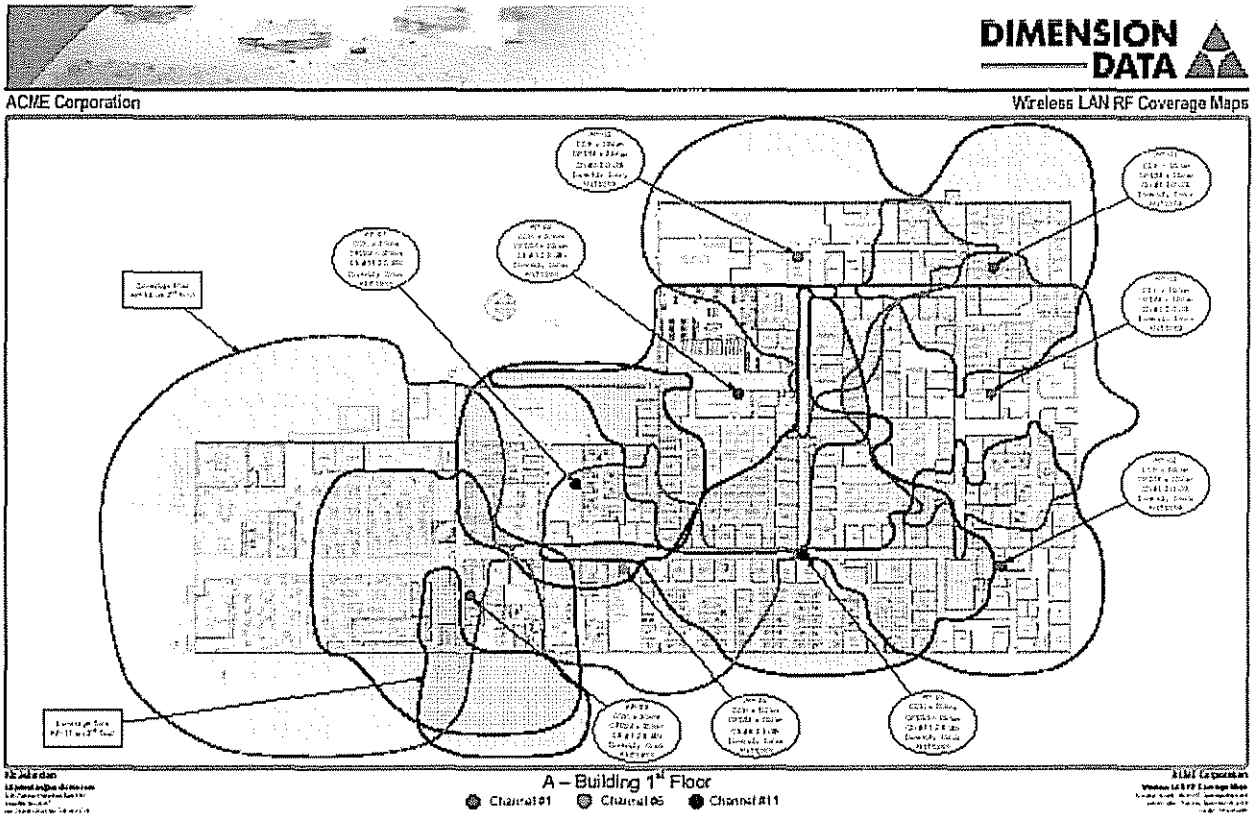
Transition Phase

- Transition to new ownership



Wireless LAN Site Survey

Dimension Data will perform a detailed Wireless LAN site survey for each of the identified ERate eligible schools. The quantity of access points and quantity and type of antennae supplied in this RFP response is an estimated number based on the rough calculations of square footage of each of the ERate schools. The results of the Wireless LAN site survey will determine the exact quantities and type of these items which may vary slightly from the original estimate. Each survey will determine access point and antenna placement and configuration to provide an optimal solution to meet the coverage and access needs of the staff and guests of each Durham Public Schools facility. Each survey will be conducted for wireless support of data equipment based on the IEEE 802.11 a/b/g standards, with options to include voice and video applications.



For each of the above identified sites, Dimension Data will utilize standards based 802.11a/b/g Wireless LAN components for each Wireless LAN Site Survey.

During each survey, the following items will be evaluated:

- RF Interference and existing wireless networks and RF signals
- AP placement
- Accurate Number of APs
- Antenna Selection
- Antenna Configurations

- Physical mounting of APs and Antennae
- Cabling pathways for Cat5E Ethernet, fiber and coax antenna cables
- Distance limitations on all cabling
- Power requirements
- Environmental Factors (NEMA enclosures)
- Channel Selection
- Radio Power Options
- 3-Dimensional Coverage Projections
- Redundancy / Failover Capabilities
- Configuration Options
- Determine data rates in selected coverage areas set forth by Durham Public Schools
- Determine Rate Shifting requirements in selected coverage areas as set forth by Durham Public Schools

Documentation

For each Wireless LAN Site Survey, Dimension Data will perform the following tasks in order to provide increased exposure of Wireless LAN technologies and components:

- Provide documentation and diagram of recommended locations of Wireless LAN equipment upon conclusion of Wireless LAN site survey

Deliverables

The deliverable for each Site Survey will include:

- Wireless LAN coverage map
- Access Point and antenna configuration sheets
- Cabling pathway design
- Detailed Wireless LAN Bill of Materials with exact quantities
- Physical installation specifications
- Network integration requirements

Unless otherwise stated, all diagrams will be provided in Visio format and all documentation will be provided in PDF format. Dimension Data will provide softcopies of all deliverable documentation created as part of this project.

Wireless Infrastructure Procurement

Based on the results of the wireless LAN site surveys, Dimension Data will provide Durham Public Schools with a Bill of Materials and manage the procurement, delivery and staging of all infrastructure components required for each site.

Wireless LAN Deployment

Fuller Administration building

Dimension Data will install and configure the following list of equipment in Durham Public Schools data center located in the Fuller Administration building. Based on available rack space, a new rack for this equipment may be needed. This will be determined during the wireless LAN site survey portion of the project.

- Six Cisco WLC4404-100 4-port Wireless LAN Controllers (WLC) capable of managing 100 access points each with four GLC-T 1000BASE-T SFP-LC modules
- One Cisco Wireless Control System (WCS) on a Hewlett Packard Proliant DL380 rack mount server capable of managing unlimited number of WLCs and access points
- Two WS-X6548-GE-TX 48-port 10/100/1000 Ethernet modules, one in each of the core 6500s for WLC connectivity

During the installation of the Wireless LAN Controllers in the Fuller Administration building data center the following tasks will be completed:

- Rack mount six WLC4404 controllers in either an existing rack or in a new rack (the need for a new rack will be determined during the site survey phase of the project)
- Power up and test WLCs for basic functionality
- Verify code version on WLCs and upgrade if necessary
- Apply basic configuration parameters to WLCs to provide IP communication and clustering
- Create the necessary interfaces and WLANs on the WLCs to support their two methods of wireless LAN connectivity: staff access with ACS/Active Directory based 802.1x/EAP authentication and Internet only guest access
- Once the access points have been installed and powered up in the ERate schools, verify they have registered with the WLCs

During the installation of the Wireless Controller System in the Fuller Administration building data center, the following tasks will be completed:

- Rack mount the HP Proliant DL380 server in either an existing rack or in a new rack (the need for a new rack will be determined during the site survey phase of the project)
- Build out, power up and test HP Proliant DL380 server for basic functionality
- Install and configure MS Windows 2003 Standard OS on the HP Proliant DL380 server
- Install the base Wireless Control System software on the HP Proliant DL380 server
- Install the unlimited license software upgrade to the Wireless Control System
- Configure Wireless Control System with wireless connectivity and security policies for Wireless LAN Controllers and access points

Dimension Data will install two 48-port 10/100/1000 Ethernet modules, in each of the two core Catalyst 6500 switches. These modules will be used to connect the six Wireless LAN Controllers into the core of Durham Public Schools network.

ERate Schools

Dimension Data will install Cisco AP1020 access points with accompanying antennae that will be determined from the wireless LAN site survey. Although a number of 328 access points and 656 ANT1728 antennae were estimated for this RFP response, the actual quantity will possibly vary in the results from the wireless LAN site survey to be performed in the ERate schools.

Access Point and Antennae Installation

- Un box, power up and test access points for proper hardware functionality
- Connect Cisco Access Points into the new LAN switch in designated IDF
- Test for proper LAN connectivity
- Verify that the Access Points have registered with their appropriate Wireless LAN Controller
- Test for proper Wireless connectivity

Documentation

Dimension Data will provide:

- Complete Project documentation
- Technical Access Point and Antenna configurations
- Digital Photos
- Visio drawings
- Wireless LAN coverage maps

Deliverables

The deliverable for each site deployment will include:

- Project and technical configuration documentation
- Successful Wireless LAN implementation

Unless otherwise stated, all diagrams will be provided in Visio format and all documentation will be provided in Microsoft Word format. Dimension Data will provide softcopies of all deliverable documentation created as part of this project.

Post Project Closeout Support

- Troubleshooting support will be performed on a T&M basis
  - This will be provided on a best effort basis
  - Dimension Data will troubleshoot to the Access Point any wireless connectivity if necessary

Assumptions and Responsibilities

This proposal is based on the following key assumptions:

- Depending on the results of the Wireless LAN Site Survey in the ERate schools, modifications to the Wireless LAN equipment and/or Professional Services may be required
- Dimension Data will be given the necessary access to appropriate facility areas including, but not limited to, building rooftops, wiring closets, common areas, and facility maintenance areas.
- If Durham Public Schools does not have a lift and one is required, the rental charge will be transferred to Durham Public Schools

LOCAL AREA NETWORK SWITCHES

Local Area Network Switches will be provided that will replace existing networking equipment as well as to support the District goal of at least 6 network connections per classroom. A list of existing network switches is included as Attachment A. The network switches provided shall be 10/100/1000 Mb capable switches and be capable of interfacing with the existing in building DPS fiber networks as well as the existing DPS Cisco based IP Telephony system. The switches will also require a configuration to be developed that will integrate with the existing Durham Public Schools network. In addition, they must meet these additional requirements:

ADDITIONAL SWITCH REQUIREMENTS:

Layer 3 Switching

All new proposed switches must be equipped with IP Layer 3 switching so that the Board has the options to route IP traffic at the closet in the future. Any port on the switch should be configurable as a layer 2 port assigned to a VLAN or a layer 3 routed port. All switches must support the following:

- layer 3 switching available on all ports:
- IP unicast routing in hardware (avail on all ports)
- IP multicast routing in hardware (avail on all ports)
- minimum 16 routable port/VLANs

- Cisco Express Forwarding hardware routing architecture delivers extremely high-performance IP routing.
- Basic IP unicast routing protocols (static, Routing Information Protocol Version 1 [RIPv1], and RIPv2) are supported for small-network routing applications.
- Up to 1005 VLANs per switch or stack and up to 128 Spanning-Tree instances per switch are supported
- Layer 3 switching is available on all ports of the 3750
- IP multicast routing on the Catalyst 3750 switch is supported when the stack master is running the enhanced multilayer image
- HSRP provides dynamic load balancing and failover for routed links, up to 32 HSRP links supported per unit or stack.
- Inter-VLAN IP routing for full Layer 3 routing between 2 or more VLANs.
- Fallback bridging forwards non-IP traffic between 2 or more VLANs. The IP Services Image is required.
- Routing is possible across the stack.
- 128 switch virtual interfaces (SVIs) are recommended. Maximum of 1000 are supported (depending on the number of routes and multicast entries). 468 routed ports are supported per stack.

802.3af Power Over Ethernet

All new proposed switches must include standard 802.3af PoE support so that the Board can be equipped to provide power to 802.3af devices such as phones, access-points, cameras, consumer devices, etc. This PoE support must include:

- PoE supported on all 10/100 ports
- Intelligent power management to limit the power allowed on a port, or pre-allocate (reserve) power for a port

  - The Cisco Catalyst 3750 Series can provide a lower total cost of ownership (TCO) for deployments that incorporate Cisco IP phones, Cisco Aironet WLAN access points, or any IEEE 802.3af-compliant end device.
  - The Cisco Catalyst 3750 Series PoE configurations can support simultaneous full-powered PoE ports at 15.4W for maximum powered-device support.
  - Using Cisco Catalyst intelligent power management, the 48-port PoE configurations can deliver the necessary power to support 24 ports at 15.4W, 48 ports at 7.7W, or any combination in between through the sophisticated power management features in Cisco IOS Software.
  - Cisco Intelligent Power Management
    - Set of capabilities offered on Cisco Catalyst switches that enable incremental optimization and control of power delivery.
    - Allows users to better manage oversubscription of power delivery, including setting predefined, per-port power allocation, identifying ports where power is not being used, reallocating power, providing power prioritization in the event that a switch runs out of available power.
    - Allows the LAN switch to have more control in identifying and reserving power for each compatible connected device.
    - Identify the exact power requirements of a compatible end device rather than use a power class.

Quality of Service (QoS)

All new proposed switches must include the ability for the Board to use QoS tools to recognize and guarantee bandwidth to mission critical applications, voice & video. These tools must also support the ability to rate limit certain applications, and must include:

- at least 4 queues per port
- adjustable queue sizes
- assign packets to queues based on 802.1p value (layer 2)
- assign packets to queues based on DSCP value (layer 3), or provide DSCP-to-802.1p mapping
- QoS assignment based on port
- QoS assignment based on VLAN
- rate limiting and/or policing of traffic based on IP Layer 3 & 4 (address & application)

QOS Capabilities of the 3750

- Advance QoS

- Cross-stack QoS allows QoS to be configured across the entire stack.
- 802.1p class of service (CoS) and differentiated services code point (DSCP) field classification are provided, using marking and reclassification on a per-packet basis by source and destination IP address, source and destination MAC address, or Layer 4 Transmission Control Protocol/User Datagram Protocol (TCP/UDP) port number.
- Cisco control-plane and data-plane QoS ACLs on all ports help ensure proper marking on a per-packet basis.
- 4 egress queues per port help enable differentiated management of up to 4 traffic types across the stack.
- Shaped Round Robin (SRR) scheduling helps ensure differential prioritization of packet flows by intelligently servicing the ingress queues and egress queues.
- Weighted Tail Drop (WTD) containing three queue thresholds that provide congestion avoidance at the ingress and egress queues before a disruption occurs. Two of the thresholds can be configured by the user; the third is set to 100 percent. Packets that exceed the specified thresholds are dropped.
- Strict priority queuing helps ensure that the highest-priority packets are serviced ahead of all other traffic.
- Different QoS configurations can be applied to primary, isolated, and community VLANs.
- There is no performance penalty for highly granular QoS capability.
- Supports up to 64 policers per port.
  - The Catalyst 3750-24 supports 256 policers.
  - The Catalyst 3750-48 supports 512 policers; 256 policers are shared among the first 24 ports, and the other 256 policers are shared among the second set of 24 ports.

Granular Rate Limiting

- Cisco committed information rate (CIR) function provides bandwidth in increments as low as 8 Kbps.
- Rate limiting is provided based on source and destination IP address, source and destination MAC address, Layer 4 TCP/UDP information, or any combination of these fields, using QoS ACLs (IP ACLs or MAC ACLs), class maps, and policy maps.
- Asynchronous data flows upstream and downstream from the end station or on the uplink are easily managed using ingress policing and egress shaping.
- Up to 64 aggregate or individual policers are available per Fast Ethernet or Gigabit Ethernet port.

Performance

All new proposed switches must be scalable and must offer maximum performance even when key features are enabled on the switch. This must include:

- line rate Layer2 forwarding
- line rate layer3 (IP, unicast and multicast) forwarding
- line rate with QoS features enabled
- line rate with filters/access-list enabled
- bonding of multiple 100Mbps or 1000Mbps interfaces
- dynamic multicast filtering (IGMP Snooping for IGMP versions v1, v2 & v3)
- storm control: specify traffic rate at which broadcast, multicast, or unicast packets can be received on a port
- in closets with more than one stackable switch, multi-gigabit stackable architectures are preferred

- 32 Gbps switching fabric
- Stack-forwarding rate of 38.7 mpps for 64-byte packets
- Forwarding rate: 6.5 mpps (Catalyst 3750-24PS), 13.1 mpps (Catalyst 3750-48PS), 17.8 mpps (Catalyst 3750G-12S)
- 128 MB DRAM and 16 MB Flash memory
- Configurable up to 12,000 MAC addresses
- Configurable up to 20,000 unicast routes (Cisco Catalyst 3750G-12S)
- Configurable up to 11,000 unicast routes (Catalyst 3750-24PS, Catalyst 3750-48PS)
- Configurable up to 1000 IGMP groups (v1, v2, or v3) and multicast routes
- Configurable maximum transmission unit (MTU) of up to 9000 bytes, with a maximum Ethernet frame size of 9018 bytes (jumbo frames) for bridging on Gigabit Ethernet ports, and up to 1546 bytes for bridging and routing on Fast Ethernet ports

Switch Support

The Board requires the new switches to support advanced security features. The switches must be able to filter out traffic on ports and/or VLANs based on the addresses and application. Also, the switches must support a wide range of the 802.1x standard features to allow the Board to control network access based on user or machine authentication. These features must include:

- Layer 2/3/4 filters/access-lists assignable per layer 2 port, layer 3 port or VLAN
- time of day filters/access-lists
- 802.1x with VVID/PVID
- 802.1x with dynamic VLAN assignment
- 802.1x with Guest VLAN
- 802.1x with filter/access-list assignment
- the ability to disable a port & notify on BPDU detection (protection against rogue switches & AP's)
- the ability to lock down specific MAC address(es) on a port

Cisco 3750 Security Features

- IEEE 802.1x allows dynamic, port-based security, providing user authentication.
- IEEE 802.1x with VLAN assignment allows a dynamic VLAN assignment for a specific user regardless of where the user is connected.

- IEEE 802.1x and port security are provided to authenticate the port and manage network access for all MAC addresses, including that of the client.
- IEEE 802.1x with an ACL assignment allows for specific identity-based security policies regardless of where the user is connected.
- IEEE 802.1x with guest VLAN allows guests without 802.1x clients to have limited network access on the guest VLAN.
- Cisco security VLAN ACLs on all VLANs prevent unauthorized data flows from being bridged within VLANs.
- Cisco standard and extended IP security router ACLs define security policies on routed interfaces for control-plane and data-plane traffic.
- Port-based ACLs for Layer 2 interfaces allow security policies to be applied on individual switch ports.
- Secure Shell (SSH) Protocol, Kerberos, and Simple Network Management Protocol Version 3 (SNMPv3) provide network security by encrypting administrator traffic during Telnet and SNMP sessions. SSH Protocol, Kerberos, and the cryptographic version of SNMPv3 require a special cryptographic software image because of U.S. export restrictions.
- Private VLAN Edge provides security and isolation between switch ports, which helps ensure that users cannot snoop on other users' traffic.
- Dynamic ARP Inspection helps ensure user integrity by preventing malicious users from exploiting the insecure nature of the ARP protocol.
- DHCP Snooping prevents malicious users from spoofing a DHCP server and sending out bogus addresses. This feature is used by other primary security features to prevent a number of other attacks such as ARP poisoning.
- DHCP Relay allows a DHCP relay agent to broadcast DHCP requests to the network DHCP server
- IP source guard prevents a malicious user from spoofing or taking over another user's IP address by creating a binding table between client's IP and MAC address, port, and VLAN.
- Bidirectional data support on the Switched Port Analyzer (SPAN) port allows Cisco Intrusion Detection System (IDS) to take action when an intruder is detected.
- MAC address notification allows administrators to be notified of users added to or removed from the network.
- DHCP Snooping helps administrators with consistent mapping of IP to MAC addresses. This can be used to prevent attacks that attempt to poison the DHCP binding database, and to rate-limit the amount of DHCP traffic that enters a switch port.
- Port security secures the access to an access or trunk port based on MAC address.
- After a specific timeframe, the aging feature removes the MAC address from the switch to allow another device to connect to the same port.

- Trusted boundary provides the ability to trust the QoS priority settings if an IP phone is present and to disable the trust setting in the event that the IP phone is removed, thereby preventing a malicious user from overriding prioritization policies in the network.
- Multilevel security on console access prevents unauthorized users from altering the switch configuration.
- The user-selectable address-learning mode simplifies configuration and enhances security.
- Bridge protocol data unit (BPDU) guard shuts down Spanning Tree PortFast-enabled interfaces when BPDUs are received to avoid accidental topology loops.
- Spanning Tree Root Guard (STRG) prevents edge devices not in the network administrator's control from becoming Spanning Tree Protocol root nodes.
- IGMP filtering provides multicast authentication by filtering out nonsubscribers and limits the number of concurrent multicast streams available per port.
- Dynamic VLAN assignment is supported through implementation of VLAN Membership Policy Server client capability to provide flexibility in assigning ports to VLANs. Dynamic VLAN facilitates the fast assignment of IP addresses.
- Cisco CMS Software security wizards ease the deployment of security features for restricting user access to a server as well as to a portion or all of the network.
- 1000 access control entries (ACEs) are supported.

VoIP

In order to support VoIP/IP Telephony, all switches should include:

- support for dynamic VLAN / voice VLAN assignment per port for IP telephones
- support for E911 related SNMP MIBs for dynamic E911 IP telephone environments

- Automatic QoS (AutoQoS) simplifies QoS configuration in voice over IP (VoIP) networks by issuing interface and global switch commands to detect Cisco IP phones, classify traffic, and help enable egress queue configuration
- IEEE 802.1x with voice VLAN permits an IP phone to access the voice VLAN irrespective of the authorized or unauthorized state of the port.
- Voice VLAN simplifies telephony installations by keeping voice traffic on a separate VLAN for easier administration and troubleshooting.
- Cisco VLAN Trunking Protocol (VTP) supports dynamic VLANs and dynamic trunk configuration across all switches.
- Cisco AVVID (Architecture for Voice, Video and Integrated Data) wizards need just a few user inputs to automatically configure the switch to optimally manage different types of traffic: voice, video, multicast, and high-priority data.

Management

In order to efficiently and securely manage and troubleshoot the new switches and the network, all new switches must support:

- SNMP versions 1, 2 & 3
- secure telnet
- Network Time Protocol (time synchronization between switches)
- centralized user authentication via RADIUS and/or TACACS
- per-VLAN Spanning Tree
- unidirectional link failure detection
- port mirroring (copy all frames from one port to another - to a network probe/sniffer)
- VLAN mirroring (copy all frames from a specific VLAN to a port - to a network proble/sniffer)
- remote port mirroring (copy all frames from a port on one switch to a port on another)
- DHCP Option 82 support (fill in option 82 fields with switch/port# on DHCP requests)
- single IP address management for stackable switches

- The Cisco Catalyst 3750 Series is equipped to support SNMP v1, v2, and SSH
- Cisco IOS CLI support provides common user interface and command set with all Cisco routers and Cisco Catalyst desktop switches.
- The Cisco Catalyst 3750 Series is equipped with other robust features that allow for network scalability and higher availability through IP routing as well as a complete suite of Spanning Tree Protocol enhancements aimed to maximize availability in a Layer 2 network. Enhancements to the standard Spanning Tree Protocol, such as Per-VLAN Spanning Tree Plus (PVST+), Uplink Fast, and Port Fast, as well as innovations such as Flex Links maximize network uptime. PVST+ allows for Layer 2 load sharing on redundant links to efficiently use the extra capacity inherent in a redundant design. Uplink Fast, Port Fast, and Backbone Fast all greatly reduce the standard 30-second to 60-second Spanning Tree Protocol convergence time.
- The 3750 series supports TACACS+ and RADIUS authentication to facilitate centralized control of the switch and restrict unauthorized users from altering the configuration.
- Switching Database Manager templates for access, routing, and VLAN deployment allow the administrator to easily maximize memory allocation to the desired features based on deployment-specific requirements.
- VLAN trunks can be created from any port, using either standards-based 802.1Q tagging or the Cisco Inter-Switch Link (ISL) VLAN architecture.
- 4000 VLAN IDs are supported.
- Cisco Group Management Protocol server functions allow a switch to serve as the Cisco Group Management Protocol router for client switches. The IP Services Image is required.
- IGMP snooping provides fast client joins and leaves of multicast streams and limits bandwidth-intensive video traffic to only the requestors.

- Remote Switch Port Analyzer (RSPAN) allows administrators to remotely monitor ports in a Layer 2 switch network from any other switch in the same network.
- For enhanced traffic management, monitoring, and analysis, the Embedded Remote Monitoring (RMON) software agent supports 4 RMON groups (history, statistics, alarms, and events).
- Layer 2 traceroute eases troubleshooting by identifying the physical path that a packet takes from source to destination.
- All 9 RMON groups are supported through a SPAN port, which permits traffic monitoring/mirroring of a single port, a group of ports, or the entire for analysis by a network analyzer such as a SwitchProbe device or other Remote Monitoring (RMON) probe
- Domain Name System (DNS) provides IP-address resolution with user-defined device names.
- Trivial File Transfer Protocol (TFTP) reduces the cost of administering software upgrades by downloading from a centralized location.
- Network Timing Protocol (NTP) provides an accurate and consistent timestamp to all intranet switches.
- Multifunction LEDs per port for port status; half-duplex and full-duplex mode; and 10BASE-T, 100BASE-TX, and 1000BASE-T indication as well as switch-level status LEDs for system, redundant-power supply, and bandwidth utilization provide a comprehensive and convenient visual management system.
- SPAN works across all the ports in a stack.
- Cisco StackWise technology unites up to nine individual Cisco Catalyst 3750 Series switches into a single logical unit, using special stack-interconnect cables and stacking software. The stack behaves as a single switching unit that is managed by a master switch elected from one of the member switches. The master switch automatically creates and updates all the switching and optional routing tables. A working stack can accept new members or delete old ones without service interruption.

LAN PROPOSAL

SURVEYOR

This section covers the tasks that will be performed by Dimension Data for providing a comprehensive review of the requirements. Dimension Data will conduct meetings, which will cover the detailed requirements of the Local Area Network and, based on those requirements, map out the detailed design of the system.

DPS Requirements

This section details every item needed from DPS:

- Provide network diagrams
- Network Related Items:
  - Review existing network documentation

- Diagrams of the existing network topology
- Configurations of the existing devices
- Server locations and functions
- As-built infrastructure information
- Network caveats

- Facility Requirements
  - Rack configuration
  - Main Distribution Frame / Independent Distribution Frame locations
  - Environmental
    - Identify power / NEMA requirements
    - Identify cooling / air flow requirements
    - Identify Uninterruptible Power Supply requirements

System Infrastructure Component Configuration

The basic strategy used by Dimension Data for a system rollout is to perform a complete staging and systems test prior to installation in Durham Public Schools environment. All staging and pre-configuration will be done at Dimension Data's staging facility.
Dimension Data's staging service is defined as the assembly, loading, system configuration, and testing of Durham Public Schools solution according to Durham Public Schools identified specifications. The following defines the various staging tasks:

- **Inventory Management** – Receiving equipment, logging, vendor management, and reporting.
- **Assembly** – Selecting components from inventory. Installing any internal components that may be required, such as network interfaces, and making all required connections.
- **Load** – Installing any industry-standard or customer-specific operating systems, applications, utilities.
- **Configuration** – Setting all hardware options (jumpers and Switch) in accordance with prescribed manufacturer instructions. Setting customer-specific software options such as software application setup, addressing, protocols, and software Switch.
- **Test** – Executing test plans according to customer-specified rules to verify the system or device is functioning properly.
- **Returns** – Upon test failure and inability to resolve the failure, equipment will be returned for under-warranty replacement.
- **Solution Delivery** – Asset tagging and reporting when requested in accordance with customer-specified guidelines. Consolidated shipments to designated end-user locations.

Infrastructure Deployment and Integration

Dimension Data will install and configure all items identified throughout Durham Public Schools (28) specified locations. All hardware has been identified to meet the requirements listed in the RFP and scoped to be divided evenly between each location's communication closets with an

enhanced image switch on each closet stack. This section outlines the tasks to be performed in the infrastructure equipment installation and integration phase of this project.

- Location: W G Pearson with (3) Closets
  - Local Area Network Switch(s)
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per closet stack to be configured as stack master
    - (3) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (3) APC Smart-UPS XL 3000VA RM 3U 120V
    - (3) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (3) APC NETWORK MANAGEMENT CARD EX
- Location: CC Spaulding with (2) Closets
  - Local Area Network Switch(s)
    - (2) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per closet stack to be configured as stack master
    - (2) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
    - (2) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (2) APC Smart-UPS XL 3000VA RM 3U 120V
    - (2) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (2) APC NETWORK MANAGEMENT CARD EX
- Location: Eastway with (5) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master configured as the stack master
    - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (5) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
    - (1) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (5) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (5) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (5) APC NETWORK MANAGEMENT CARD EX
- Location: George Watts with (3) Closets
  - Local Area Network Switch(s)
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per closet stack to be configured as stack master
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (3) APC Smart-UPS XL 2200 VA RM 3U 120V

- (3) APC Smart-UPS XL 48V RM 3U Battery Pack
- (3) APC NETWORK MANAGEMENT CARD EX

- Location: Lakewood with (3) Closets
  - Local Area Network Switch(s)
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per closet stack to be configured as stack master
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (3) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (3) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (3) APC NETWORK MANAGEMENT CARD EX
- Location: Fayetteville Street with (2) Closets
  - Local Area Network Switch(s)
    - (2) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per closet stack to be configured as stack master
    - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (2) APC Smart-UPS XL 3000VA RM 3U 120V
    - (2) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (2) APC NETWORK MANAGEMENT CARD EX
- Location: Bethesda with (5) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (5) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
    - (1) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (5) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (5) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (5) APC NETWORK MANAGEMENT CARD EX
- Location: Glenn with (6) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (5) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (6) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
    - (1) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (6) APC Smart-UPS XL 2200 VA RM 3U 120V

- (6) APC Smart-UPS XL 48V RM 3U Battery Pack
- (6) APC NETWORK MANAGEMENT CARD EX

- Location: Burton with (4) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (5) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (4) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (4) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (4) APC NETWORK MANAGEMENT CARD EX
- Location: Lakeview with (1) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - To be configured as stack master
    - (1) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (1) APC Smart-UPS RT 7500VA RM 208V w/ 208V to 120V 2U
    - (1) APC Smart-UPS RT 192V RM Battery Pack
    - (1) APC NETWORK MANAGEMENT CARD EX
- Location: R N Harris with (3) Closets
  - Local Area Network Switch(s)
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per closet stack to be configured as stack master
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (3) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (3) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (3) APC NETWORK MANAGEMENT CARD EX
- Location: Merrick Moore with (4) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (5) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (4) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (4) APC Smart-UPS XL 48V RM 3U Battery Pack

- (4) APC NETWORK MANAGEMENT CARD EX

- Location: E K Powe with (1) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - To be configured as stack master
    - (6) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (1) APC Smart-UPS RT 7500VA RM 208V w/ 208V to 120V 2U
    - (2) APC Smart-UPS RT 192V RM Battery Pack
    - (1) APC NETWORK MANAGEMENT CARD EX
- Location: Y E Smith with (1) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - To be configured as stack master
    - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (1) APC Smart-UPS RT 7500VA RM 208V w/ 208V to 120V 2U
    - (1) APC Smart-UPS RT 192V RM Battery Pack
    - (1) APC NETWORK MANAGEMENT CARD EX
- Location: Lowes Grove with (5) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (5) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
    - (6) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (5) APC Smart-UPS XL 3000VA RM 3U 120V
    - (5) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (5) APC NETWORK MANAGEMENT CARD EX
- Location: Holt with (4) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (7) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (4) APC Smart-UPS XL 3000VA RM 3U 120V
    - (4) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (4) APC NETWORK MANAGEMENT CARD EX

- Location: Neal with (5) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (6) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (5) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (5) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (5) APC NETWORK MANAGEMENT CARD EX
- Location: Chewning with (4) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (4) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
    - (5) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (4) APC Smart-UPS XL 3000VA RM 3U 120V
    - (4) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (4) APC NETWORK MANAGEMENT CARD EX
- Location: Early College with (4) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (4) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
    - (1) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (4) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (4) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (4) APC NETWORK MANAGEMENT CARD EX
- Location: Githens with (5) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (6) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)

- Uninterruptible Power Supply(s)
  - (5) APC Smart-UPS XL 2200 VA RM 3U 120V
  - (5) APC Smart-UPS XL 48V RM 3U Battery Pack
  - (5) APC NETWORK MANAGEMENT CARD EX

▲ Location: Eno Valley with (3) Closets
- Local Area Network Switch(s)
  - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
    - (1) per closet stack to be configured as stack master
  - (6) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
- Uninterruptible Power Supply(s)
  - (3) APC Smart-UPS XL 3000VA RM 3U 120V
  - (3) APC Smart-UPS XL 48V RM 3U Battery Pack
  - (3) APC NETWORK MANAGEMENT CARD EX

▲ Location: Club with (1) Closets
- Local Area Network Switch(s)
  - (1) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
    - To be configured as stack master
  - Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
  - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
- Uninterruptible Power Supply(s)
  - (1) APC Smart-UPS RT 7500VA RM 208V w/ 208V to 120V 2U
  - (1) APC Smart-UPS RT 192V RM Battery Pack
  - (1) APC NETWORK MANAGEMENT CARD EX

▲ Location: Hillside with (7) Closets
- Local Area Network Switch(s)
  - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
    - To be placed in MDF closet configured as the stack master
  - (6) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
    - (1) per IDF closet stack to be configured as stack master
  - (7) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
  - (8) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
- Uninterruptible Power Supply(s)
  - (7) APC Smart-UPS XL 3000VA RM 3U 120V
  - (7) APC Smart-UPS XL 48V RM 3U Battery Pack
  - (7) APC NETWORK MANAGEMENT CARD EX

▲ Location: Shepard with (3) Closets
- Local Area Network Switch(s)
  - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
    - (1) per closet stack to be configured as stack master
  - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
- Uninterruptible Power Supply(s)
  - (3) APC Smart-UPS XL 2200 VA RM 3U 120V

- (3) APC Smart-UPS XL 48V RM 3U Battery Pack
- (3) APC NETWORK MANAGEMENT CARD EX

- Location: Parkwood with (5) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (5) Cisco Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image Switch(s)
    - (1) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (5) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (5) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (5) APC NETWORK MANAGEMENT CARD EX
- Location: Forestview with (5) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (6) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (5) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (5) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (5) APC NETWORK MANAGEMENT CARD EX
- Location: Southwest with (4) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (3) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master
    - (5) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
  - Uninterruptible Power Supply(s)
    - (4) APC Smart-UPS XL 2200 VA RM 3U 120V
    - (4) APC Smart-UPS XL 48V RM 3U Battery Pack
    - (4) APC NETWORK MANAGEMENT CARD EX
- Location: Brogden with (5) Closets
  - Local Area Network Switch(s)
    - (1) Cisco Catalyst 3750 12 SFP Enhanced Multilayer Image Switch
      - To be placed in MDF closet configured as the stack master
    - (4) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Multilayer Image Switch(s)
      - (1) per IDF closet stack to be configured as stack master

        - (6) Cisco Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image Switch(s)
    - Uninterruptible Power Supply(s)
        - (5) APC Smart-UPS XL 2200 VA RM 3U 120V
        - (5) APC Smart-UPS XL 48V RM 3U Battery Pack
        - (5) APC NETWORK MANAGEMENT CARD EX
- All Switches above will be Installed and Configured as followed:
    - Installation
        - Rack mount unit into a Durham Public Schools provided rack
        - Power up unit
        - Confirm successful power up
        - Terminate trunk connections
    - Durham Public Schools staff is responsible for migrating all PCs, printers, servers and miscellaneous Ethernet/IP devices)
    - VLANs and management interface
    - 802.1q trunking to all other Catalyst Switches
    - Configure auxiliary / voice VLANs
    - Layer 2 QoS
    - Basic Layer 2 best practice configurations
    - Configuration to integrate into the Durham Public Schools network
- Layer 3 Routing
    - VLAN IP addressing
    - HSRP routing (if applicable)
- Routing protocol (TBD pending detailed design phase)
    - Basic security features (username and password)
    - Layer 3 QoS
    - Basic best practice configurations
- All Uninterruptible Power Supplies above will be Installed and Configured as followed:
    - Installation
        - Install the Network Management Card in a UPS card slot
        - Install APC UPS
            - Install the mounting rails into a Durham Public Schools provided rack
            - Remove the battery module
            - Mount the UPS in the rack
            - Ground UPS
            - Reinstall the battery module
        - Install battery pack(s)
            - Install the mounting rails into a Durham Public Schools provided rack
            - Remove the battery trays from the battery pack
            - Mount the battery pack in the rack
            - Reinstall the battery trays and attach the front bezel

- Connect the battery pack to the Smart-UPS
- Plug the UPS into a two-pole, three-wire, grounding receptacle only
- Powerup and run diagnostics
- Configure APC UPS to recognize battery pack(s)
- Configure UPS' Network Management Card
  - Configure TCP/IP settings
    - IP address of the Management Card
    - Subnet mask
    - Default gateway
  - Upgrade to the latest firmware version
  - Configure Control Console
    - Configure for Web and/or Telnet/SSH access
    - Basic security features (username and password)
- Test completed UPS solution

MIGRATION AND PLANNING

Dimension Data has provided for the Switch refresh of up to (28) Durham Public Schools locations. Refreshes shall occur in (28) migration event(s) and then be supported by Dimension Data with (1) (4) hour day of on site support on the first regular business day following the migration event.

FINAL TEST AND ACCEPTANCE / SITE SIGN-OFF

This section provides a review of the test and acceptance procedures performed by Dimension Data in conjunction with Durham Public Schools. Durham Public Schools will have up to the last day Dimension Data is on-site (which is usually the post-cut support day) to conduct test acceptance in conjunction with Dimension Data. A copy of the Test and Acceptance forms will be provided at the kick-off meeting. This form is used to confirm Durham Public Schools sign-off during the test and acceptance period. Modifications to the test and acceptance forms may be made at Project Initiation, but must be approved by both Durham Public Schools and Dimension Data.

DOCUMENTATION

Dimension Data will provide Durham Public Schools with all documentation compiled during the course of the project. The documentation will be delivered to Durham Public Schools in both hard copy and soft copy formats (on a Data CD). This documentation will include the following:

- As-built Final Documentation
  - Network Configuration
    - Device Hardware configurations
    - Device Software Configuration
    - Software Version reports
    - Network Diagrams

ASSUMPTIONS AND RESPONSIBILITIES

This Scope of Work is based on the following key assumptions:

PROJECT EXCLUSIONS

The list below outlines a list of items that are the responsibility of Durham Public Schools for the completion of this project. Some tasks listed herein may be offloaded to Dimension Data at the engineers prevailing hourly rate. Please discuss offloading tasks to your project or account managers for proper procedures.

- Environmental variables such as cooling
- Shipping Costs
- Taxes
- Travel costs
- Desktop connections
- Printers connections
- Ancillary devices
- Applications
- Server connections, rebooting or troubleshooting
- Network nomenclatures
- Telecommunication circuits provisioning or troubleshooting
- IP Telephony configuration or troubleshooting
- Circuits and Bandwidth
- Loading dock access for receiving equipment
- Adequate floor space to store and stage the equipment
- Access to a secure area for staging and configuration
- Adequate power to terminate the equipment
- Network access to terminate the equipment
- Disposal services to remove boxes and packing materials

INSTALLATION

- Durham Public Schools agrees to provide reasonable access to Durham Public Schools sites and facilities, including where applicable, computer equipment, telecom equipment, facilities, work space and telephone for Dimension Data's use during the project.
- Durham Public Schools agrees to provide proper security clearances and/or escorts as required to access the site for equipment installation and maintenance.
- Durham Public Schools agrees to provide any special safety equipment if required for the site.
- Durham Public Schools agrees to provide adequate secured storage areas on the Durham Public Schools sites for Dimension Data equipment for the duration of the project.
- Durham Public Schools agrees to install and verify the operation of all external communications equipment not provided by Dimension Data (equipment not included in the Dimension Data bill of materials). This equipment will be installed, tested, and deemed to be operational prior to Dimension Data's arrival at Durham Public Schools site.

- Durham Public Schools agrees to, when requested by Dimension Data, provide the Durham Public Schools building layouts, including the floor plan, cabling and power location for all applicable sites.
- Durham Public Schools agrees that any delays caused by the carrier on the installation, termination, provisioning or activation of circuits may be charged at the out-of-scope hourly rate.
- Durham Public Schools agrees to ensure that all circuits have been clearly labeled in a manner that identifies what component of network equipment it is to be used with.
- Durham Public Schools agrees to prepare the installation site. In particular, ensure that proper environmental conditions are met and adequate power is available. On-site installation delays caused by the lack of completed site preparation, or failure to meet any responsibilities as specified above on the part of Durham Public Schools will be billed at the prevailing Engineers time and materials basis at the hourly rates set forth hereunder. Any additional costs incurred by Durham Public Schools as a result of delays caused other than by Dimension Data shall be the sole responsibility of Durham Public Schools.
- Durham Public Schools agrees to provide technician or end user to test functionality of equipment once installation is complete.
- All circuits will be cross connected, demarcation extended and terminated by Durham Public Schools or a Durham Public Schools certified wiring contractor. If Dimension Data is required to perform and circuit extensions, Durham Public Schools will be billed as per the appropriate time and material rate to complete the task.
- As evolution continues throughout the lifespan of all emerging technologies, Dimension Data will implement the most reliable software version (as determined by Dimension Data and manufacturer) to date. In the event that manufacturer caveats are discovered after implementation is complete, Dimension Data can upgrade or load required patches on a T&M basis as requested by Durham Public Schools.

TECHNICAL

- Durham Public Schools will provide a network topology diagram for the existing network infrastructure if available.
- Durham Public Schools shall be responsible for any changes to existing servers, printers, and workstations to support the installation of the new LAN infrastructure.
- The Project Manager/Consultant will maintain both soft and hard copies. Minutes of all meetings will be distributed to the attendees and any relevant parties, usually within 24 hours.
- While under Dimension Data supervision, all documents and scripts will be subject to Dimension Data version control.
- Unless otherwise stated, all diagrams will be provided in Visio format and all documentation will be provided in Microsoft Word or Portable Document format. Dimension Data will provide softcopies of all deliverable documentation created as part of this project.

PROJECT SCHEDULING

- Designate a single point of contact to whom all Dimension Data communications may be addressed and who has the authority to act on all aspects of the services. Such contact shall be available during normal hours of business (Monday through Friday 8:00am to 5:30pm local time, excluding Dimension Data observed holidays).
- Unless otherwise agreed to by the parties, ensure that Dimension Data's request for information or documentation needed for this project is met within three (3) business days of Dimension Data's request.
- Notify Dimension Data Project Manager of any schedule changes within ten (10) business days of any scheduled activity. Scheduling changes and/or cancellations made after this ten (10) day window shall be subject to out-of-scope hours being charged to the project.

UNINTERRUPTIBLE POWER SUPPLIES

The District requests that uninterruptible power supplies be provided to protect all networking equipment. The proposed Uninterruptible Power Supplies will provide at least 30 minutes of runtime for all connected network devices. A network interface should be provided for all UPS units. In addition, the Uninterruptible Power Supplies must meet the following management requirements:

Management

In order to efficiently and securely manage and troubleshoot the new switches and the network, all new switches must support:

- SNMP versions 1, 2 & 3
- Centralized reporting and alerting of faults

A list of the number of wiring closets is included with Appendix A.

Dimension Data Response: These are addressed in the previous section as a part of Local Area Network Switches implementation.

BASIC MAINTENANCE

The District also requests basic maintenance services on e-Rate eligible equipment in the district networks. Basic maintenance services are necessary if, but for the maintenance at issue, the connection would not function and serve its intended purpose with the degree of reliability ordinarily provided in the marketplace to entities receiving such services without e-rate discounts. Basic maintenance services do not include services that maintain equipment that is not supported or that enhance the utility of equipment beyond the transport of information, or diagnostic services in excess of those necessary to maintain the equipment's ability to transport information.

This includes, but is not limited to the following services:

1) Routine network maintenance, including but not limited to, maintenance of switches, internal wiring, uninterruptible power supplies and wireless local area network equipment and the resolution of equipment failure and malfunction.
2) Four hour on-site response for downed network equipment including but not limited to switches, and LAN wireless equipment.
3) The list of equipment and wiring that vendor will be responsible for maintaining includes all eligible switches, uninterruptible power supplies, wireless devices, and wiring. A specific listing of equipment will be made available as part of the service contract.

Note: Network monitoring is not included in this contract. Only maintenance work on eligible networking equipment and internal wiring is being requested.

The district requests that personnel used to accomplish all above-mentioned tasks are qualified to work on network devices. The district requires the vendor to have at least two technicians familiar with each school network and does not want a different technician reporting to the school each visit. Continuity is very important. Technicians providing Cisco switch maintenance must be a Cisco Certified Network Associate (CCNA). Durham Public Schools has estimated that it will take 60 weekly technical assistance hours of CCNA certified technical assistance, and 20 hours of wiring maintenance to maintain the network. Obviously this may vary from week to week and may or may not be an accurate reflection. It is the service provider's responsibility to provide the maintenance regardless of the number of hours required from week to week and may or may not be an accurate reflection. It is the service provider's responsibility to provide the maintenance regardless of the number of hours required.

Dimension Data Response:

Basic Maintenance

Durham Public Schools has requested that Dimension Data provide technical resource to support the following services, and potentially other related maintenance efforts:

- Routine network maintenance, including but not limited to, maintenance of switches, internal wiring, uninterruptible power supplies and wireless local area network equipment and the resolution of equipment failure and malfunction.
- Four hour on-site response for downed network equipment including but not limited to switches, and LAN wireless equipment.
- The list of equipment and wiring that Dimension Data will be responsible for maintaining includes all eligible switches, uninterruptible power supplies, wireless devices, and wiring. A specific listing of equipment will be made available as part of the service contract.

The district requests that personnel used to accomplish all above-mentioned tasks are qualified to work on network devices. The district requires the vendor to have at least two technicians familiar with each school network and does not want a different technician reporting to the school each visit. Continuity is very important. Technicians providing Cisco switch maintenance must be a Cisco Certified Network Associate (CCNA).

It is Dimension Data's recommendation that Durham Public Schools leverage (3) full-time Dimension Data engineers to support the proposed equipment. These engineers will be committed to Durham Public Schools for 40 hours/week, (52) weeks a year. The skill set of these resources are as follows:

Engineer

- Has a depth and breadth of knowledge in all of the below Dimension Data's technical core competencies.
- Core Competencies
    - Is proficient in configuration and installation in his chosen technology area
    - Single product specialization
    - Junior supervisory skills
    - Well versed in at least one operating system; NT, W2000, Novell, Unix, etc
    - Possesses a high degree of system level troubleshooting
    - Is proficient in utilizing product tools and can render assistance to Technical Engineers
    - Demonstrates a fundamental understanding of Dimension Data processes and a solid understanding of its products (Insite, Primer, Uptime, etc..)

Must continue on a manufacturers certification track (MCSE, CNE, CCNP, etc..)

COST PROPOSAL

The Cost Proposed shall incorporate all costs for the proposed scope of services for the total contract period. The Cost Proposal shall record only the proposed cost as required, and shall not record any other rates, amounts, or information. Other rates, amounts, or information that are alternatives to the proposed scope of services and the justification and their benefits may be included. It shall not record any text that could be construed as a qualification of the cost amounts proposed. If the Proposer fails to specify the Cost Proposal as required, the District shall determine the proposal to be nonresponsive and reject it. The Proposer must sign and date the Cost Proposal. Prices should include shipping and all taxes applicable. Vendor must accept purchase orders and will be required to bill the Universal Service Fund for matching funds. District will only be responsible for payment of the matching percentage as is required under the E-rate program.

E-Rate SPIN Number: 143007139

Description of Services	*Professional Services*	*Hardware / Software / Maintenance*
Wireless	$133,625.00	$369,596.58
Local Area Network (Includes UPS)	$278,873.00	$1,575,131.30
Cisco SMARTnet Maintenance		$5,848.50
Basic Maintenance and Support Annually (Based on DPS requirements)		$525,000.00
Sub Total	**$412,498.00**	**$2,475,576.30**
Grand Total	**$2,888,074.30**	

APPENDIX A - BILL OF MATERIAL

Dimension Data BOM

Mfr Part #	Description	Qty
Access Points		
CISCO 1000 Series 802.11a/b/g AP w/Int Ant and RP-TNC, FCC cnfg		328
AIR-AP1020-A-K9	CISCO 1000 Series 802.11a/b/g AP w/Int Ant and RP-TNC, FCC cnfg	328
CON-SNT-AP1020A	SMARTNET 8X5XNBD 1K Series 802.11a/b/g	328
AIR-ANT1728	CISCO 2.4 GHz, 5.2 dBi Ceiling Omni Ant w/RP-TNC Connector	656

Mfr Part #	Description	Qty
LAN Switches		
CISCO Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Image		87
WS-C3750-48PS-E	CISCO Catalyst 3750 48 10/100 PoE + 4 SFP Enhanced Image	87
CAB-STACK-50CM	CISCO Cisco StackWise 50CM Stacking Cable	87
CAB-AC	CISCO Power Cord,110V	87
CON-SNT-375048PE	SMARTNET 8X5XNBD Catalyst 3750 48 10/	87
CISCO Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image		114
WS-C3750-48PS-S	CISCO Catalyst 3750 48 10/100 PoE + 4 SFP Standard Image	114
CAB-STACK-50CM	CISCO Cisco StackWise 50CM Stacking Cable	114
CAB-AC	CISCO Power Cord,110V	114
CON-SNT-375048PS	SMARTNET 8X5XNBD Catalyst 3750 48 10/	114
CISCO Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image		48
WS-C3750-24PS-S	CISCO Catalyst 3750 24 10/100 PoE + 2 SFP Standard Image	48
CAB-STACK-50CM	CISCO Cisco StackWise 50CM Stacking Cable	48
CAB-AC	CISCO Power Cord,110V	48
CON-SNT-375024PS	SMARTNET 8X5XNBD Catalyst 3750 24 10/	48
CISCO Catalyst 3750 12 SFP Enhanced Multilayer Image		16
WS-C3750G-12S-E	CISCO Catalyst 3750 12 SFP Enhanced Multilayer Image	16
CAB-STACK-50CM	CISCO Cisco StackWise 50CM Stacking Cable	16
CAB-AC	CISCO Power Cord.110V	16
CON-SNT-3750G12E	SMARTNET 8X5XNBD Cat 3750 12 SFP Enhanced Multilayer Img	16
GLC-SX-MM=	CISCO GE SFP, LC connector SX transceiver	300

Mfr Part #	Description	Qty
UPS Systems		
AP9617	American Power Conversion NETWORK MANAGEMENT CARD EX	103
SU2200RMXL3U	American Power Conversion APC Smart-UPS XL 2200 VA RM 3U 120V	69
SU3000RMXL3U	American Power Conversion APC Smart-UPS XL 3000VA RM 3U 120V	30
SURT7500RMXLT-1TF5	American Power Conversion APC Smart-UPS RT 7500VA RM 208V w/ 208V to 120V 2U Step-Down Transformer	4
SURT192RMXLBP	American Power Conversion APC Smart-UPS RT 192V RM Battery Pack	5
SU48R3XLBP	American Power Conversion APC Smart-UPS XL 48V RM 3U Battery Pack	99
SURTRK2	American Power Conversion APC Smart-UPS RT 19" Rail Kit for Smart-UPS RT 3/5/7.5/10kVA	4

Mfr Part #	Description	Qty
Wireless LAN Management		
CISCO 4400 Series WLAN Controller for up to 100 Lightweight APs		6
AIR-WLC4404-100-K9	CISCO 4400 Series WLAN Controller for up to 100 Lightweight APs	6
AIR-PWR-CORD-NA	CISCO AIR Line Cord North America	6
CON-SNT-WC440410	SMARTNET 8X5XNBD 4404-100 WLAN Controller	6
GLC-T=	CISCO 1000BASE-T SFP	24
AIR-WCS-WB-1.0-K9	CISCO Cisco WCS Base v3.0 up to 50 Lightweight AP Win2K/2003Server	1
CON-SAU-WCS-WB1X	SW APP SUPP + UPGR WCS Base v1.0 up to 50	1
AIR-WCS-WLB-SITE	CISCO Cisco WCS Base Site License for unlimited APs, Win/Linux	1
CON-SAU-WLB-SITE	SW APP SUPP + UPGR WCS Base Site Lic	1
WS-X6548-GE-TX=	CISCO Catalyst 6500 48-port fabric-enabled 10/100/1000 Module	2

Mfr Part #	Description	Qty
Wireless LAN Management Server		
378736-001	HEWLETT PACKARD - PROLIANT SERVERS PROLIANT DL380 G4 XEON DP 3.2G	1
378749-B21	HEWLETT PACKARD - SERVER OPTIONS XEON-DP 3.2GHZ 2MB 800MHZ	1
343055-B21	HEWLETT PACKARD - SERVER OPTIONS 1GB KIT (2X512MB) PC3200 DDR2	1
343056-B21	HEWLETT PACKARD - SERVER OPTIONS 2GB (2X1GB) PC2-3200 DDR SDRAM	1
286776-B22	HEWLETT PACKARD - SERVER OPTIONS 36GB 15K U320 SCSI HOT PLUG	3
355892-001	HEWLETT PACKARD - SERVER OPTIONS REDUNDANT POWER SUPPLY DL380 G4	1
293048-B21	HEWLETT PACKARD - SERVER OPTIONS REDUNDANT FAN KIT (3 FANS) FOR	1
P73-00268	MICROSOFT OPEN VOLUME WINDOWS SERVER STANDARD 2003	1
P73-00156	MICROSOFT WWF MLF WINDOWS SERVER STD 2003 ENG	1

APPENDIX B – EQUIPMENT BY LOCATION

DPS Wireless Equipment Quantity Breakdown by Location:

Elementary Schools	*AIR-AP1020-A-K9*	*AIR-ANT1728*
Bethesda Elem	6	12
Burton Elem	8	16
CC Spaulding Elem	11	22
Club Elem	7	14
E K Powe Elem	16	32
Eastway Elem	8	16
Eno Valley Elem	10	20
Fayetteville St Elem	6	12
Forest View Elem	14	28
Glenn Elem	6	12
George Watts Elem	0	0
Holt Elem	14	28
Lakewood Elem	8	16
Merrick Moore Elem	17	34
Parkwood Elem	13	26
R N Harris Elem	11	22
Southwest Elem	15	30
W G Pearson Elem	6	12
Y E Smith Elem	8	16
Middle Schools		
Brogden Mid	14	28
Chewning Mid	14	28
Githens Mid	14	28
Lakeview Mid	6	12
Lowes Grove Mid	14	28
Neal Mid	14	28
Shepard Mid	14	28
High Schools		
Early College HS	14	28
Hillside HS	40	80
Total:	***328***	***656***

DPS Switch Equipment Quantity Breakdown by Location:

Elementary Schools	*Closets*	*WS-C3750G-12S-E*	*WS-C3750-48PS-E*	*WS-C3750-24PS-S*	*WS-C3750-48PS-S*	*GLC-SX-MM=*
Bethesda Elem	5	1	4	5	1	16
Burton Elem	4	1	3		5	12
CC Spaulding Elem	2		2	2	2	4
Club Elem	1		1	1	4	0
E K Powe Elem	1		1		6	0
Eastway Elem	5	1	4	5	1	16
Eno Valley Elem	3		3		6	8
Fayetteville St Elem	2		2		4	4
Forest View Elem	5	1	4		6	16
George Watts Elem	3		3		3	8
Glenn Elem	6	1	5	6	1	20
Holt Elem	4	1	3		7	12
Lakewood Elem	3		3		3	8
Merrick Moore Elem	4	1	3		5	12
Parkwood Elem	5	1	4	5	1	16
R N Harris Elem	3		3		3	8
Southwest Elem	4	1	3		5	12
W G Pearson Elem	3		3	3	3	8
Y E Smith Elem	1		1		4	0
Middle Schools						
Brogden Mid	5	1	4		6	16
Chewning Mid	4	1	3	4	5	12
Githens Mid	5	1	4		6	16
Lakeview Mid	1		1	1	3	0
Lowes Grove Mid	5	1	4	5	6	16
Neal Mid	5	1	4		6	16
Shepard Mid	3		3		3	8
High Schools						
Early College HS	4	1	3	4	1	12
Hillside HS	7	1	6	7	8	24
	Total:	***16***	***87***	***48***	***114***	***300***

DPS UPS Equipment Quantity Breakdown by Location:

Elementary Schools	*AP9617*	*SU2200RMXL3U*	*SU3000RMXL3U*	*SURT7500RMXLT-1TF5*	*SURT192RMXLBP*	*SU48R3XLBP*	*SURTRK2*
Bethesda Elem	5	5				5	
Burton Elem	4	4				4	
CC Spaulding Elem	2		2			2	
Club Elem	1			1	1		1
E K Powe Elem	1			1	2		1
Eastway Elem	5	5				5	
Eno Valley Elem	3		3			3	
Fayetteville St Elem	2		2			2	
Forest View Elem	5	5				5	
Glenn Elem	6	6				6	
George Watts Elem	3	3				3	
Holt Elem	4		4			4	
Lakewood Elem	3	3				3	
Merrick Moore Elem	4	4				4	
Parkwood Elem	5	5				5	
R N Harris Elem	3	3				3	
Southwest Elem	4	4				4	
W G Pearson Elem	3		3			3	
Y E Smith Elem	1			1	1		1
Middle Schools							
Brogden Mid	5	5				5	
Chewning Mid	4		4			4	
Githens Mid	5	5				5	
Lakeview Mid	1			1	1		1
Lowes Grove Mid	5		5			5	
Neal Mid	5	5				5	
Shepard Mid	3	3				3	
High Schools							
Early College HS	4	4				4	
Hillside HS	7		7			7	
Total:	***103***	***69***	***30***	***4***	***5***	***99***	***4***

Contract Execution / Acceptance

By signing below Dimension Data and Durham Public Schools hereby accept this *Network and Maintenance* Statement of Work. This SoW shall be effective as of the last date signed below (the "Effective Date").

By: Dimension Data North America, Inc.	By: Durham Public Schools
By: [signature]	By: Charles H Douglas
Name: Scott C Cruikshank	Name: Charles H Douglas
Title: VP of Sales: Mid-Atlantic	Title: Director of Technology Services
Date: 2/16/06	Date: 2/16/06

Please indicate your acceptance of the included Statement of Work by executing and returning two originals to the following address. One fully signed original will be mailed to you.

David Watkins
Dimension Data
801 Corporate Center Drive
Suite 128
Raleigh, North Carolina, 27607

Exhibit C

Universal Service Administrative Company
Schools & Libraries Division

Administrator's Decision on Appeal – Funding Year 2006-2007

November 30, 2006

Charles A. Douglass
Durham Public Schools
P.O. Box 30002
Durham, NC 27702

Re:	Applicant Name:	DURHAM PUBLIC SCHOOL DISTRICT
	Billed Entity Number:	126878
	Form 471 Application Number:	533758
	Funding Request Number(s):	1475514, 1475541
	Your Correspondence Dated:	October 13, 2006

After thorough review and investigation of all relevant facts, the Schools and Libraries Division (SLD) of the Universal Service Administrative Company (USAC) has made its decision in regard to your appeal of USAC's Funding Year 2006 Funding Commitment Decision Letter for the Application Number indicated above. This letter explains the basis of USAC's decision. The date of this letter begins the 60 day time period for appealing this decision to the Federal Communications Commission (FCC). If your Letter of Appeal included more than one Application Number, please note that you will receive a separate letter for each application.

Funding Request Number(s):	1475514, 1475541
Decision on Appeal:	**Denied**
Explanation:	

- Upon thorough review of the appeal letter and the relevant documentation, the USAC has reviewed and assessed your appeal. The USAC determined that this funding request was properly evaluated. On April 17, 2006, USAC sent a Selective Review Information Request (SRIR) requesting signed and dated contracts and/or other agreements with service providers related to the funding requests. On August 4, 2006, Selective Review re-requested a copy of the signed

and dated contracts. Your August 11, 2006 response stated that the vendor did not require a signed and dated contract until the work begins. FCC rules state that contract for the products/services be signed and dated by both parties prior to the filing of the Form 471. Program procedures do not permit USAC to accept new information on appeal except where an applicant was not given an opportunity to provide information during the initial review or an error was made by PIA. You have failed to provide evidence that USAC erred in its initial decision. Consequently, the appeal is denied.

- USAC has determined that, at the time you submitted your Form 471 application, you did not have a signed and dated contract for services in place with your service provider(s) for services other than tariffed or month-to-month services. FCC Rules require that applicants submit a completed FCC Form 471 "upon signing a contract for eligible services." 47 C.F.R. sec. 54.504(c). The FCC Rules further require that both beneficiaries and service providers must retain executed contracts, signed and dated by both parties. See Schools and Libraries Universal Service Support Mechanism, CC Docket No. 02-6, Fifth Report and Order and Order, 19 FCC Rcd 15808, 15824-26, FCC 04-190 para. 48 (rel. Aug. 13, 2004). The FCC has consistently upheld USAC's denial of funding when there is no contract in place for the funding request. See Request for Review by Waldwick School District, Schools and Libraries Universal Service Support Mechanism, File No. SLD-256981, CC Docket No. 02-6, Order, 18 FCC Rcd. 22994, DA 03-3526 (rel. Nov. 5, 2003). The FCC Form 471 instructions under Block 5 clearly state that you MUST sign a contract for all services that you order on your Form 471 except tariffed services and month-to-month services. See Instructions for Completing the Schools and Libraries Universal Service, Services Ordered and Certification Form, OMB 3060-0806 (November 2004) at page 23.

If your appeal has been approved, but funding has been reduced or denied, you may appeal these decisions to either USAC or the FCC. For appeals that have been denied in full, partially approved, dismissed, or canceled, you may file an appeal with the FCC. You should refer to CC Docket No. 02-6 on the first page of your appeal to the FCC. Your appeal must be received or postmarked within 60 days of the date on this letter. Failure to meet this requirement will result in automatic dismissal of your appeal. If you are submitting your appeal via United States Postal Service, send to: FCC, Office of the Secretary, 445 12th Street SW, Washington, DC 20554. Further information and options for filing an appeal directly with the FCC can be found in the "Appeals Procedure" posted in the Reference Area of the SLD section of the USAC website or by contacting the Client Service Bureau. We strongly recommend that you use the electronic filing options.

We thank you for your continued support, patience and cooperation during the appeal process.

Schools and Libraries Division
Universal Service Administrative Company